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ENGINEERING & ENVIRONMENTAL SERVICES

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January 28, 2008

Mr. Darius Ostrauskas
Project Manager
U.S. EPA, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Off–Site Vapor Intrusion Investigation Results
Harley–Davidson Motor Company Operations, Inc., York, PA
Langan Project No. 1406706

INTRODUCTION

On behalf of Harley–Davidson Motor Company Operations, Inc. (Harley–Davidson), Langan Engineering & Environmental Services (Langan) is pleased to present the results of the off–site vapor intrusion investigation performed at the northeast property boundary area of the Harley-Davidson York Facility. The investigation was conducted to evaluate the off–site vapor intrusion risk related to potential volatilization from groundwater at the northeast property boundary. Since October 2003 Harley–Davidson has expended considerable effort to responsibly assess the vapor intrusion pathway relevant to the York, Pennsylvania facility. These previous efforts were documented in a September 11, 2006 letter to USEPA Region III prepared by Langan for Harley–Davidson (see Attachment 1). Harley–Davidson completed this off–site soil investigation in good faith to re–affirm that there is no risk to human health via the vapor intrusion pathway, a conclusion previously supported by abundant data and analysis and validated by EPA approval of the Human Health Environmental Indicators for the site in September 2005.

The off–site soil investigation was performed in accordance with the plan presented by Langan for Harley–Davidson during the March 12, 2007 site–wide remedial investigation status meeting with the EPA, Pennsylvania Department of Environmental Protection (PADEP), and United States Army Corps of Engineers (USACE) held at the York, Pennsylvania facility. The off–site investigation was outlined in a letter to the EPA dated June 29, 2007. The investigation began with a survey of properties in the northeast property area, targeting specific properties to be investigated, reaffirming access permission and locating proposed soil boring locations in the field. Based on responses to a more wide–spread survey of property owners surrounding the northeastern property boundary, twelve properties reportedly with basements nearest to the site and spanning the northeast property boundary area were targeted to complete soil borings. These twelve properties include three properties specifically requested by USEPA to be investigated. Soil borings were drilled alongside/adjacent to the foundations to confirm soils

are present at a depth immediately beneath but not deeper than 5 feet below the foundation and to collect vapor samples.

The field investigation was conducted on August 30 & 31, 2007 and involved advancing one soil boring at each of nine properties where final access approval could be obtained from the property owner. Access could not be arranged with property owners for the other three targeted locations. Soil was confirmed to be present at or below the estimated depth of foundation at eight of the nine locations drilled. Because of a localized shallow groundwater condition at one of the nine properties drilled, a soil vapor sample could not be collected. Soil vapor samples were collected at eight of the nine properties and the soil vapor samples were analyzed for volatile organic compounds. All soil–vapor results are below the PADEP soil–gas screening criteria which reaffirms that there is no off-site human health risk via the vapor intrusion pathway associated with the Harley–Davidson property.

Details of the investigation and results are described herein.

PROPERTY SURVEY AND SOIL BORING LOCATIONS

In January 2007, Langan conducted a survey of 68 property owners in the northeast property area to determine if off–site structures had basements and to seek permission to install a soil boring on selected properties. Thirty–eight responses to the survey were received and each acknowledged having a basement associated with an on–site structure at the property. Thirty–one of the 38 responses also granted permission to install a soil boring on their property. Conservatively, Harley–Davidson sought to investigate those properties that are nearest neighbors to the northeast property boundary and obtain a representative sampling of subsurface conditions at those selected locations. The targeted locations included three properties across Paradise Road from on-site groundwater collection wells, CW-5 and CW-6, that were specifically recommended by the USEPA Region III. The boring locations selected for the investigation are shown on Figure 1.

For each of the 12 targeted properties, Langan and its subcontractor, Terra Probe, Inc. requested a public utility mark–out to include mark–outs up to the public utility connection at the perimeter of each dwelling. Additionally, Langan contacted the property owners/occupants directly by telephone and via door to door to jointly determine an agreed upon location at each property that is clear of public/private utilities and any other known obstructions. While meeting with the residents, we also attempted to determine the basement depth relative to ground surface at each selected boring location. With property owner/occupant approval, the proposed location of each boring was clearly marked in the field before drilling occurred.

Langan was unable to successfully arrange property access at three of the twelve targeted locations. The property owner at 2024 City View Avenue declined permission for Langan to drill a boring on their property. Unfortunately for two other targeted properties, despite numerous efforts including telephone calls, door to door visits, and notices, no responses were received

for the properties at 559 Paradise Rd and 599 Paradise Rd. Table 1 summarizes responses to efforts to coordinate access for soil borings among the twelve target properties.

SOIL BORINGS & SOIL VAPOR SAMPLE COLLECTION/ANALYSIS

Soil borings were advanced adjacent to the foundations of dwellings at nine properties along the northeastern property boundary to access soils at a depth immediately beneath but not deeper than 5 feet below the foundation. Soil borings were advanced using a low profile direct push/hydraulic geoprobe rig. Soil vapor sampling standard procedures using direct push systems and summa canisters described in Langan's September 11, 2006 letter (see Attachment 1) were followed.

Where soil below the estimated depth of foundation was confirmed, a sample of the soil vapor within each boring was collected from a discrete interval (6 to 12 inches). Soil vapor samples were collected from the boring using a post run tubing system (PRT). The drive rod was retracted separating the expendable point from the point holder, and creating the void in the soil. A PRT adapter and tubing were advanced down the inner rods and secured to the expendable point holder. The PRT O–ring connections provided for a vacuum–tight seal to assure the sample was taken from the desired depth at the bottom of the hole and to prevent sample interference from up hole. The tubing at the surface was attached to a vacuum pump to purge the line. A helium leak test was then performed by placing a chamber at the top of the boring, charging the chamber with helium, and monitoring discharge from the vacuum pump for the presence of helium. Once a non–leaky seal was confirmed and the line was purged, the soil vapor sample was extracted using a 1–liter summa canister fitted with a laboratory–calibrated flow regulator to maintain and limit flow at 200 cc/min. An ambient air blank was also collected each day. Soil vapor and air samples were submitted to Accutest of Dayton New Jersey for analysis of volatile organic compounds by Method TO-15.

The properties where a soil boring was advanced are listed below accompanied by the corresponding soil–gas sample designations:

- 1998 City View (SV-1)
- 2040 City View (SV-2)
- 2048 City View (SV-3)
- 2064 City View (SV-4)
- 2032 City View (SV-5)
- 569 Paradise (SV-6)
- 579 Paradise (SV-7)
- 677 Paradise (SV-8)
- 539 Paradise (soil–gas sample could not be collected).

Borings were advanced to depths ranging from 9 to 11.5 ft–bgs and below the estimated bottom of basement in all locations except at 2032 City View (SV–05) where the sampler could only penetrate to 6.75 ft–bgs. This penetration is effectively at the estimated bottom of

basement depth of the on-site structure at this property. A soil–gas sample was collected to evaluate the soil–gas at the approximate basement foundation depth on this property. At the 539 Paradise Road property, locally shallow groundwater was encountered at a depth of 5.5 ft–bgs and this localized condition precluded the collection of a representative soil–gas sample.

SOIL VAPOR SCREENING RESULTS

The soil vapor analytical results were reviewed, compiled and compared to EPA and PADEP vapor intrusion screening criteria to assess potential vapor intrusion risks. Analytical results are summarized in Table 2 and the laboratory deliverable is provided as Attachment 2. The laboratory analytical data was validated by a third party in accordance with Region III modifications to "Laboratory Data Validation Functional Guidelines for Organic Analyses", USEPA September 1994. The data validation report is provided as Attachment 3.

The soil–gas analytical results were first compared to USEPA Target Shallow Soil-Gas Concentration Corresponding to Target Indoor Air Concentration, where, the Soil–Gas to Indoor–Air Attenuation Factor = 0.1 and at a risk of 1×10^{-5} for all compounds except trichloroethylene which was evaluated at a risk of 1×10^{-4}. Soil-gas results were also compared to the Pennsylvania Department of Environmental Protection's (PADEP) Residential Soil-Gas Criteria (defined as 100 x the PADEP Residential Indoor Air Quality Medium Specific Concentration).

No compounds of concern (based on the previous on-site soil vapor pathway screening evaluation which includes: trichloroethylene, tetrachloroethylene, cis–1,2-dichloroethene, chloroform, dibromochloromethane and 1,3 butadiene) were detected in any of the August 2007 soil-gas samples. Concentrations of VOCs found in off-site soil-gas samples are all below the PADEP Residential Soil-Gas Criteria. Concentrations of VOCs found in off-site soil-gas samples are also all below the EPA soil–gas screening criteria except for benzene which is not a vapor intrusion constituent of concern associated with the Harley-Davidson facility. Benzene soil-gas concentrations slightly exceed the USEPA screening criterion (31 ug/m^3) at SV-03 (54.3 ug/m^3), SV-04 (72.2 ug/m^3) and SV-06 (39.6 ug/m^3). Benzene soil–gas concentrations do not exceed the PADEP screening criterion (270 ug/m^3) at any sample location.

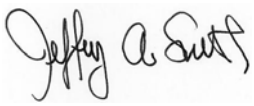
CONCLUSIONS

The presence of soil at or beneath the estimated basement foundation depths at all nine locations drilled as part of this supplemental evaluation, validates the weight of evidence previously presented by Harley–Davidson for the on–site vapor pathway assessment evaluations. The absence of any vapor intrusion constituents of concern in off–site soil–gas samples shows that the constituents of concern associated with the historical operations at Harley–Davidson property are not migrating via soil–gas to pose an environmental concern. The off–site investigation results affirm the previous finding that there is no off–site human health risk via the vapor intrusion pathway associated with the Harley–Davidson property.

If you have any questions or should your require further information, please call.

Very Truly Yours,

Langan Engineering and Environmental Services, Inc.



Jeffrey A. Smith, P.G

Project Manager II

Encls: Table 1 — Summary of Selected Off–Site Investigation Locations and Access
Table 2 — Summary of Off–Site Soil–Gas Analytical Results
Figure 1— Off–Site Soil Vapor Assessment Boring/Sampling Locations
Attachment 1 — September 11, 2006 Letter from Langan to USEPA
Attachment 2 — Laboratory Deliverables (CD included)
Attachment 3 — Third Party Data Validation Report

Cc: Sharon Fisher (Harley–Davidson)
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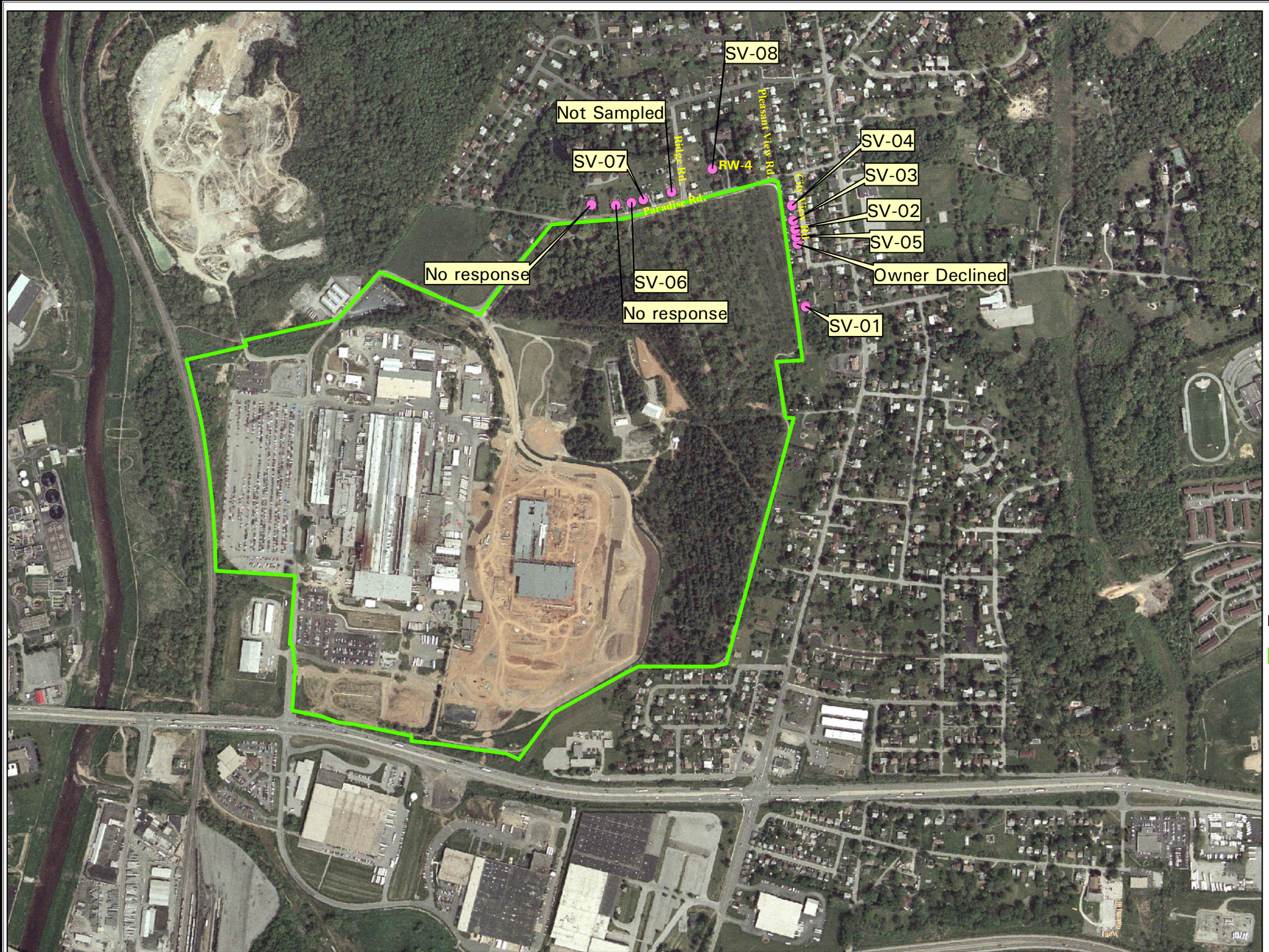
FIGURES



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Legend

- Harley-Davidson Property Boundary
- Property Proposed for Soil boring/Soil Vapor Sampling
- Soil Vapor sample collected (SV-01)

Note:
1. Aerial image provided by IntraSearch, Inc. Image date May 2002

Figure 1
Off-site Soil Vapor Assessment Boring/Sampling Locations
August 30 & 31 2007
Harley-Davidson Motor Company Operations, Inc.
York, Pennsylvania

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300 150 0 300 Feet

SCALE: 1 inch = 300 feet
DATE: January 29, 2008
DRN. BY: MP
CKD. BY: ETS/TS
JOB#: 1406706

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TABLES

Table 1
Properties Selected for Off–Site Soil–Gas Investigation
Soil Vapor Pathway Assessment
Harley–Davidson Motor Company Operations, Inc., York, PA

Street Address	Tax Parcel ID	Sampled ID	Status	Comments
579 Paradise Rd.	46–000–08–0003–G	SV–07	boring advanced & sample collected	
599 Paradise Rd.	46–000–08–0003–F	not sampled	not sampled	no response to several efforts to contact owner
1998 City View Rd.	46–000–07–0162–B	SV–01	boring advanced & sample collected	
2024 City View Rd.	46–000–07–0159	not sampled	not sampled	owner declined participation
2032 City View Rd.	46–000–07–0158	SV–05	boring advanced & sample collected	
2040 City View Rd.	46–000–07–0157	SV–02	boring advanced & sample collected	
2048 City View Rd.	46–000–07–0156	SV–03	boring advanced & sample collected	
2064 City View Rd.	46–000–07–0154	SV–04	boring advanced & sample collected	
539 Paradise Rd.	46–000–08–0003–H	not sampled	not sampled	shallow groundwater / no sample
559 Paradise Rd.	46–000–08–0003–J	not sampled	not sampled	no response to several efforts to contact owner
569 Paradise Rd.	46–000–08–0003–E	SV–06	boring advanced & sample collected	
677 Paradise Rd.	46–000–08–0005	SV–08	boring advanced & sample collected	

Table 2
Summary of Soil-Gas Analytical Results, Residential Samples
Soil Vapor Pathway Assessment
Harley-Davidson Motor Company Operations, Inc., York PA

		Soil – Gas Screening		Sample ID	FB001		FB002		SV–01		SV–02		SV–03		SV–04		SV–05		SV–06		SV–07		SV–08	
		USEPA Target Shallow Soil–Gas	PADEP Residential Soil–Gas	Date Lab ID Dilution Sample Depth Units	8/30/07 J70587-5 1.55 NA ug/m^3		8/31/07 J70587-13 1.53 NA ug/m^3		8/30/07 J70587-6 1 8' - 9' ug/m^3		8/30/07 J70587-7 1 9.5' - 10.5' ug/m^3		8/30/07 J70587-8 1 9.5' - 10.5' ug/m^3		8/30/07 J70587-9 1 10.5' - 11.5' ug/m^3		8/31/07 J70587-10 1 5.75' - 6.75' ug/m^3		8/31/07 J70587-11 1 8' - 9' ug/m^3		8/31/07 J70587-12 1 8' - 9' ug/m^3		8/31/07 J70587-14 1 9.5' - 11' ug/m^3	
Volatile Organic Compounds (TO-14/15)	**CAS Number**																							
Dichlorodifluoromethane (Freon 12)	75-71-8	2,000	24000		2.9		3.2		ND		ND		ND		ND		ND		ND		ND		ND	
Chloromethane (methyl chloride)	74-87-3	240	2500		ND		0.93		ND		3.9		5.6		ND		ND		ND		ND		ND	
Vinyl Chloride	75-01-4	28	240		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Bromoethene (Vinyl Bromide)	593-60-2	NS	67		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chloroethane	75-00-3	100,000	2500		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Trichlorofluoromethane (Fluorotrichloromethane / Freon 11)	75-69-4	7,000	97000		1.7		1.9		ND		ND		ND		ND		ND		ND		ND		ND	
Freon TF (Freon 113)	11126-05-9	NS	NS		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,1-Dichloroethene	75-35-4	2,000	28000		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Methylene Chloride (Dichloromethane)	75-09-2	520	4400		ND		ND		ND		ND		ND		ND		ND		ND		ND		15	
1,1-Dichloroethane	75-34-3	5,000	1300		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
cis-1,2-Dichloroethene	156-59-2	350	4900		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chloroform	67-66-3	11	44		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,1,1- Trichloroethane	71-55-6	22,000	290000		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Carbon Tetrachloride	56-23-5	16	140		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Benzene	71-43-2	31	270		2.1		1		17		21		54.3		72.2		28		39.6		21		10	
1,2-Dichloroethane	107-06-2	9	81		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Trichloroethene*	79-01-6	22	130		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,2-Dichloropropane	78-87-5	40	200		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
cis-1,3-Dichloropropene	10061-01-5	NS	NS		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Toluene	108-88-3	4,000	56000		5.7		3.8		14		15		47.1		147		28		55.4		17		5.7	J
trans-1,3-Dichloropropene	10061-02-6	NS	NS		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,1,2-Trichloroethane	79-00-5	15	130		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Tetrachloroethene	127-18-4	81	3600		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chlorobenzene	108-90-7	600	2400		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Ethylbenzene	100-41-4	220	1900		2.4		1.3		ND		ND		4.2	J	ND		ND		4.8	J	5.6	J	ND	
Xylene (m,p)	No CAS Number	NS	NS		4.8		1.4		7.4		5.6	J	8.3		7.8		6.9		9.6		14		ND	
Styrene	100-42-5	10,000	140000		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Xylene (o)	95-47-6	NS	NS		2.2		1		ND		ND		ND		ND		ND		2.6	J	5.6	J	ND	
1,1,2,2-Tetrachloroethane	79-34-5	4.2	36		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,3-Dichlorobenzene	541-73-1	1,100	NS		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,4-Dichlorobenzene	106-46-7	8,000	330		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,2-Dichlorobenzene	95-50-1	2,000	19000		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,2,4-Trichlorobenzene	120-82-1	2,000	2000		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Hexachlorobutadiene	87-68-3	NS	NS		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,3,5-Trimethylbenzene	108-67-8	60	830		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,2,4-Trimethylbenzene	95-63-6	60	830		0.84	J	0.69	J	5.4	J	ND		ND		ND		ND		ND		7.4	J	ND	
1,2-Dichlorotetrafluoroethane (Freon 114)	76-14-2	NS	NS		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	1.1	9.5		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
1,3-Butadiene	106-99-0	0.87	67		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Carbon Disulfide	75-15-0	7,000	97000		ND		1.3		5.6		ND		7.2		19		24		24		8.1		ND	
Acetone	67-64-1	3,500	4300000		18		19		371		677		1430		2400		1280		1480		1390		565	
Isopropyl Alcohol	67-63-0	NS	NS		334	E	4.7		92.9		77.9		75.7		36.4		73.5		106		129		41.3	
Methyl tert-Butyl Ether	1634-04-4	30,000	8100		2		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Cyclohexane	110-82-7	NS	NS		ND		ND		ND		ND		6.9		9.3		ND		5.5		ND		ND	
Dibromochloromethane	124-48-1	10	NS		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Methyl Ethyl Ketone	78-93-3	10,000	140000		1.8		1.1		10		13		28		25		21		16		9.4		ND	
1,4-Dioxane	123-91-1	NS	270		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Methyl Isobutyl Ketone	108-10-1	800	9700		ND		ND		7.4		5.3	J	9		7.8		ND		ND		ND		ND	
Methyl Butyl Ketone (2-Hexanone)	591-78-6	NS	NS		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Bromoform (Tribromomethane)	75-25-2	220	1900		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Bromodichloromethane	75-27-4	14	57		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
trans-1,2-Dichloroethene	156-60-5	700	9700		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
4-Ethyltoluene	622-96-8	NS	NS		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
3-Chloropropene	107-05-1	NS	140		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
2,2,4-Trimethylpentane	540-84-1	NS	NS		4.1		ND		30		33		69.6		90.6		49.5		51.4		35		20	
Bromomethane	74-83-9	50	680		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
2-Chlorotoluene	95-49-8	NS	9700		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
n-Hexane	110-54-3	2,000	28000		ND		ND		ND		45.1		81.4		98.3		66.6		57.1		45.1		ND	
Tetrahydrofuran	109-99-9	NS	NS		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
n-Heptane	142-82-5	NS	NS		ND		ND		ND		7.4		21		33		11		17		ND		ND	
Xylenes (total)	1330-20-7	70,000	14000		6.9		2.4		7.4		5.6	J	8.3		7.8		6.9		12		20		ND	
tert-Butyl Alcohol	75-65-0	NS	NS		0.61		ND		12		11		17		19		7.3		8.2		15		ND	
Benzyl Chloride	100-44-7	5	43		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Ethanol	64-17-5	NS	NS		14		23.9		174		228		315		179		262		288		288		76.3	
Ethyl Acetate	141-78-6	32,000	440000		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Propylene	115-07-1	NS	NS		ND		ND		ND		261		438		536		1550		56.7		335		237	
Vinyl Acetate	108-05-4	2,000	28000		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	

Notes:

Value exceeds EPA Target Shallow Soil-Gas Concentration (Risk = 1 x 10^{-5})

All detected concentrations are below their respective PADEP Residential Soil-Gas Screening Concentration (= Residential Indoor Air Quality MSC x 100)

* EPA Target Shallow Soil-Gas Concentration for Trichloroethene is evaluated at Risk= 1x10^{-4}

NA Not Applicable

NS No Screening Standard

ND Parameter Not Detected

J Estimated Concentration Below Instrument Calibration Range

E Estimated Concentration Above Instrument Calibration Range

ATTACHMENT 1
September 11, 2006 Letter from Langan to USEPA

LANGAN

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

11 September 2006

Mr. Darius Ostrauskas
Project Manager
U.S. EPA, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Vapor Intrusion Evaluation - Response to EPA May 12, 2006 Comments on Langan's Letter of March 28, 2006
Harley-Davidson Motor Company Operations, Inc., York, PA
Langan Project No. 1406706

INTRODUCTION

Harley-Davidson Motor Company Operations, Inc. (Harley-Davidson) has reviewed the Environmental Protection Agency's (EPA's) May 12, 2006 comment letter concerning the vapor pathway assessment at the Harley-Davidson facility in York, Pennsylvania. EPA's latest comments are the most recent of three separate comment letters they have prepared since Harley-Davidson submitted the Indoor Vapor Pathway Screening Assessment Supplemental RI Report on March 11, 2005. In good faith, Harley-Davidson has repeatedly performed additional analyses and further soil vapor modeling to directly respond to and address each of EPA's specific comments. In chronological order, the comment response documents concerning the March 2005 Vapor Pathway Assessment Report are included in Attachment A.

In September 2005, EPA declared that the Human Health Environmental Indicators (EIs) for the property, which consider the vapor pathway, are satisfied. However following the Human Health EI approval, EPA prepared subsequent comments in a letter dated December 2, 2005 and again in May 2006 requesting further evaluation of the potential vapor pathway. The vapor pathway assessment performed by Harley-Davidson incorporates a considerable degree of conservatism, inherent to both the Johnson and Ettinger (J&E) vapor model and the various input parameters and assumptions used to evaluate the vapor pathway at the site.

In spite of the weight of the evidence and results that indicate there is no risk to human health via the vapor intrusion pathway associated with the site, EPA has now requested that "residences in the vicinity of Harley-Davidson's on-site groundwater collection wells CW-5 and CW-6 should be inventoried to determine the depth of the foundation relative bedrock" and additional soil vapor modeling be conducted using on-site groundwater concentrations as the source term for the model. The overwhelming weight of the available evidence indicates that

an off-site vapor intrusion risk is unlikely and EPA's continual requests for further evaluation are inappropriate in view of the unreasonably conservative vapor pathway evaluations already performed by Harley-Davidson to date.

This letter reiterates and summarizes the conservative site-specific evaluations performed and the overwhelming weight of evidence generated to date by Harley-Davidson that support the EPA's Human Health EI approval and affirm that an off-site vapor intrusion risk is not likely. In spite of the weight of evidence and because EPA now requests collection of off-site data, Harley-Davidson has also prepared a scope of work that focuses on collecting relevant data at off-site properties immediately adjacent to the northeast property boundary to definitively address EPA's latest comments.

VAPOR PATHWAY ASSESSMENT CHRONOLOGY AND SUMMARY

It is important to establish the background concerning Harley-Davidson's efforts to assess the vapor intrusion pathway that commenced with submittal of the October 2003 Vapor Intrusion Screening Assessment Workplan. A chronological summary of the vapor pathway assessment, J&E modeling, data evaluations, and ensuing EPA comments and Harley-Davidson responses is provided below. In chronological order, the EPA comment letters and Harley-Davidson responses are included in Attachment A for reference.

Vapor Pathway Screening Assessment Supplemental RI Report, March 11, 2005

The primary purpose of the vapor intrusion screening assessment that commenced in October 2003 was to collect reliable soil vapor analytical data to supplement the existing groundwater analytical data and determine whether or not the vapor intrusion pathway poses an unacceptable risk to human health at the Harley-Davidson York Facility. The screening assessment followed the *USEPA Draft Guidance for evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (November 2002)* and the *October 2003 Indoor Vapor Pathway Screening Assessment Workplan* that was reviewed and approved by USEPA.

A baseline screen using the available groundwater analytical data for monitoring wells near the targeted on-site non-occupational building areas and the Southeast Property Boundary Area (SPBA) and Northeast Property Boundary Area (NPBA), indicated a select few volatile organic compounds exist in groundwater at concentrations above the generic screening criteria and these constituents in groundwater may pose a vapor intrusion risk. In a two-phase investigation, soil vapor sampling and analysis was performed to more completely assess the potential vapor intrusion pathway via the Tier II and Tier III screening process. Ultimately, the J&E (1991) Model for Subsurface Vapor Intrusion into Buildings was used to predict the indoor air concentrations for inhabited buildings on-site and immediately off-site near the NPBA and SPBA.

Inputs to the J&E model were based on measured or reasonably determined site specific conditions (vapor source concentrations, soil properties, building characteristics) and otherwise use conservative assumptions from our conceptual site model and that are inherent in the J&E model. Based on the soil vapor analytical data and the soil vapor model predictions described in the Vapor Pathway Assessment Report (March 2005), the vapor pathway due to volatilization and migration of constituents in groundwater is not complete and there is no on-site or off-site risk to human health via the vapor intrusion pathway at this time.

July 18, 2005 Response to EPA April 18, 2005 Comments

In a letter dated April 18, 2005, EPA commented on the March 2005 Vapor Pathway Assessment Report and their comments were discussed at an April 21, 2005 meeting with Harley-Davidson. In response to EPA's April 18, 2005 comment letter (see Attachment A), Harley-Davidson performed the additional modeling and analyses requested and addressed EPA's comments in a letter dated July 18, 2005.

Pertinent sections of the March 11, 2005 report were revised and additional modeling and data analyses were performed. Although EPA guidance indicates use of the 10^{-4} risk level is appropriate for TCE, the soil vapor results for TCE were compared to the 10^{-5} risk levels as requested by EPA. Also as requested by EPA, the vapor pathway was further evaluated using a more conservative EPA default value for vadose zone water-filled porosity rather than the site specific determined value used in the initial evaluation. Nonetheless, conclusions about the vapor pathway risks for site constituents of concern are not substantively changed based on these more conservative analyses requested by EPA.

March 28, 2006 Response to EPA December 2, 2005 Comments

In September 2005, EPA formally approved a yes determination for the Current Human Exposures Under Control Environmental Indicator for the property, which considers the vapor pathway. In spite of that declaration, EPA prepared additional comments concerning the vapor pathway in a letter dated December 2, 2005. In the December 2005 letter EPA expressed that actual conditions (specifically, depth below grade to the water table and the thickness of the soil beneath nearby off-site structures), may differ from conditions assumed in the J&E modeling that was performed for the Harley-Davidson site. EPA requested further J&E modeling to assess the model sensitivity to certain parameters that relate to soil stratum thickness and depth to groundwater. In a March 28, 2006 letter, Harley-Davidson again responded and proposed J&E modeling tasks and input data to perform the additional vapor modeling and evaluate the model sensitivity to the parameters that EPA identified. Harley-Davidson's March 28, 2006 response letter is included in Attachment A.

May 12, 2006 EPA Comment Letter

During a May 4, 2006 meeting and in a follow-up comment letter dated May 12, 2006, EPA commented on the additional J&E modeling tasks proposed by Harley-Davidson. EPA's May 12, 2006 comment letter is included in Attachment A. Although EPA requested additional J&E modeling that Harley-Davidson did propose in the March 28, 2006 response letter, EPA now requested that "residences in the vicinity of Harley-Davidson's on-site groundwater collection wells CW-5 and CW-6 should be inventoried to determine the depth of the foundation relative to bedrock". EPA's stated objective of this inventory is to confirm there are no residences which may be constructed on weathered rock or where the soil thickness is less than the thickness of the capillary fringe for the subject soil. Also, EPA now recommended specific *on-site groundwater* source concentrations at collection wells CW-5 and CW-6, rather than the more representative off-site concentrations proposed by Harley-Davidson, be used as input for further vapor intrusion analysis using the J&E model.

Response to EPA May 12, 2006 Comment Letter

A copy of EPA's May 12, 2006 comment letter is included in Attachment A. A summary of EPA's comments is outlined below followed by Harley-Davidson's individual responses and a summary of the overwhelming weight of evidence that substantiates the conclusion that an off-site vapor intrusion risk is not likely.

Groundwater Concentrations as input to Further J&E Modeling – EPA stated that the input groundwater concentrations for the additional modeling tasks proposed to address their comments concerning properties along the northeast property boundary should be the maximum detected concentrations for on-site wells CW-5 and CW-6 over the last five years (rather than the off-site concentrations for wells along the northeast property boundary that are regularly sampled by Harley-Davidson). The additional vapor model analyses should also be performed for residences downgradient of the South Property Boundary Area. The model input groundwater concentrations for the South Property Boundary Area should be the maximums detected in well MW-64 over the last five years.

Model Sensitivity to Specific Building Air Exchange Rates - For Building 11, if it becomes apparent that the model output is sensitive to the input air exchange rate parameter, the evaluation should also use the EPA's default air exchange rate input for industrial buildings.

Inventory of Off-site Properties to Confirm Depth to Bedrock Below Foundations - "...residences in the vicinity of collection wells CW-5 and CW-6 should be inventoried to determine the depth of the foundation relative to bedrock." The objective of this inventory is to confirm there are no residences which may be constructed on

> weathered rock or where the soil thickness is less than the thickness of the capillary fringe for the subject soil. Available information should be reviewed to determine if weathered bedrock may exist immediately below residences that are near the property boundary, including those that are southeast of the property.

Harley-Davidson has considered each of EPA's comments and prepared the following responses.

Groundwater Concentrations as Input to Further J&E Modeling

First, Harley-Davidson questions the rationale of using groundwater concentrations as a source term for additional vapor modeling in light of the available soil vapor samples data that exists for the site, especially the northeast and southeast property boundary areas. Nonetheless, to respond to EPA's requests, Harley-Davidson considered all of the groundwater quality data collected for off-site wells and springs to the immediate northeast of the property that have been sampled over the last five years. To be protective and conservative, the maximum concentrations for these off-site wells in the five-year period were proposed for use in additional J&E modeling analysis requested by EPA.

However, EPA believes that the maximum detected concentrations for on-site collection wells CW-5 and CW-6 over the last five years (rather than the off-site concentrations for wells along the northeast property boundary that are regularly sampled by Harley-Davidson) be used as input to the J&E model. The fact is that wells CW-5 and CW-6 are two of several collection wells operated by Harley-Davidson to *prevent* the off-site migration of groundwater to the northeast and we do not believe that concentrations detected at CW-5 and CW-6 are representative of the off-site concentrations that may exist in groundwater beneath properties located immediately northeast of the site.

Further, in view of the available soil vapor data that was collected along the northeast and southeast property boundaries, we do not understand the value of additional vapor modeling that uses groundwater as the input source concentration. The abundant soil vapor data represents the soil vapor conditions that are a result of the volatile organic concentrations in nearby groundwater. Groundwater is the source of the vapor concentrations that were measured and these vapor concentrations drive the potential vapor intrusion risk. The vapor pathway assessment performed by Harley-Davidson used the soil vapor concentrations measured at each location as the source in the J&E model to evaluate the potential vapor intrusion risk. The use of measured soil vapor concentrations is more relevant, appropriate and reasonable than EPA's suggestion to use on-site groundwater concentrations as a source term to model off-site vapor intrusion.

Harley-Davidson acknowledges that additional data to directly assess off-site groundwater quality and soil thickness at locations to the southeast will be obtained as part of the supplemental remedial investigation phase that is forthcoming. The draft Supplemental

Remedial Investigation Workplan includes the installation of off-site monitoring wells southeast of the site that will provide data to more directly determine the depth to bedrock and off-site groundwater conditions. These additional data will be reviewed to confirm the appropriate and representative data to be considered in the vapor intrusion analysis along the southeast property boundary area.

Model Sensitivity to Specific Building Air Exchange Rates

In light of site specific air exchange data, whether design data or otherwise, the site specific data should prevail over EPA's default air exchange rate which is likely not representative and overly conservative. Harley-Davidson will provide additional data to substantiate the site specific air exchange rate for Building 11 to be used in any further vapor intrusion pathway analysis for this building.

Inventory of Off-site Properties to Confirm Depth to Bedrock Below Foundations

Harley-Davidson has considered EPA's objective for an off-site inventory to confirm there are no residences which may be constructed on weathered rock or where the soil thickness beneath the structure foundation would preclude J&E modeling of the vapor pathway. While we currently cannot cite specific data that directly address EPA's continuing comments about existence of soil and its thickness beneath off-site structures, the weight of evidence overwhelmingly indicates there is no reasonable risk to human health via the vapor intrusion pathway associated with the site. The overwhelming evidence is cited in the Vapor Pathway Assessment Report (March 2005) and in all of the responses to EPA comments included in Attachment A that further emphasize the conservative nature of all the analyses performed to date to asses the vapor pathway. All the data and analyses to date lead to a conclusion that there is no current risk to human health via the vapor pathway.

Key lines of evidence and support for these conclusions include the following which are supported by the data referenced in the Vapor Pathway Assessment Report (March 2005) and all ensuing responses to EPA comments that are included in Attachment A:

1. The site specific soil vapor modeling and vapor pathway assessment conceptual approach and inherent assumptions of the J&E model are very conservative. The model assumes an infinite source and no chemical transformation of VOCs; two considerably conservative aspects of the model. The conceptual approach to the site includes a conservative assumption that the off-site residential buildings are situated directly over the perimeter soil-vapor sample locations. The measured soil vapor concentrations are expected to be conservative because the source concentrations in the on-site groundwater are expected to be higher than groundwater concentrations beneath off-site properties.

2. The physical soil properties were determined using soil samples collected in the drier months of July and August 2004 and the pore water saturation data is reflective of dry soil conditions which add to the degree of conservatism in the site specific analysis.

3. Quantitative summa canister sample collection was based on screening data obtained from numerous samples collected using MIP data. Following the EPA-approved workplan, screening results from multiple samples collected using the MIP were relied upon to select one summa canister sample at each sample location biased to the highest concentrations indicated by the MIP results. As such, this approach is designed to consider the worst case soil vapor conditions at each sample location based on multiple screening concentrations.

4. Inputs to the J&E model were based on measured or reasonably determined site specific conditions (vapor source concentrations, soil properties, building characteristics) and otherwise are based on conservative assumptions inherent in our conceptual site model and the J&E model. Based on the soil vapor analytical data and the soil vapor model predictions described in the Vapor Pathway Assessment Report (March 2005), the vapor pathway due to volatilization and migration of constituents in groundwater is not complete and there is no on-site or off-site risk to human health via the vapor intrusion pathway at this time.

5. EPA requested additional evaluation of certain factors (i.e. TCE vs. risk=10^{-5} and substituting the site specific value with the default value for vadose zone soil water filled porosity) that affect the J&E vapor model. This additional evaluation was performed and the predicted indoor air concentrations using the default water-filled value indicate no predicted indoor air concentrations above the 10^{-5} (10^{-4} for TCE) for relevant constituents and screening criteria. These results combined with those referenced in the March 2005 Vapor Pathway Assessment Report supported EPA's approval of the Human Health EIs in September 2005.

6. EPA expressed uncertainty for the inhabited structures located immediately adjacent to the property boundary and suggested they may or not be situated on top of bedrock or has insufficient soil thicknesses which are conditions that cannot be evaluated using the J&E model. To further evaluate the model sensitivity to these hypothetical conditions, the existing soil vapor concentrations (above Tier II soil gas screening criteria) for samples collected using summa canisters at the site were evaluated using the J&E model and assuming a nominal soil thickness in the model. As an illustration, the site specific J&E model for the Harley-Davidson site was run using a minimal soil thickness that approaches the limits of soil thickness that can be accommodated by the J&E vapor model. To be more conservative, the default value for vadose zone soil water filled porosity was also used with the minimal thickness of soil term. The model default building characteristics were used in the predictive simulations to generate predicted indoor air concentrations for each soil vapor concentration. Even under such an overly

conservative and unreasonable analysis, the model results still indicate there is no on-site or off-site risk to human health for site-related constituents of concern via the vapor intrusion pathway.

PROPOSED INVENTORY/INVESTIGATION – NORTHEAST PROPERTY BOUNDARY

In spite of the weight of the evidence that indicates no human health risk via the vapor pathway and because of EPA's persistent comments about uncertain soil conditions beneath off-site structures, Harley-Davidson proposes to conduct soil borings and potential soil vapor sampling at select properties immediately adjacent to the location of on-site wells CW-5 and CW-6 along the northeast property boundary. We propose to contact property owners in the northeast property boundary area with whom Harley-Davidson has active agreements for access as part of ongoing periodic private well sampling activities. We will ask these property owners specific questions about the construction of their homes, the existence of a basement, and any details about the foundation that they can readily provide. Based on the findings from that inquiry, Harley-Davidson will propose to conduct an investigation of soil conditions beneath the foundation depths of those structures that are nearest to wells CW-5 and CW-6 with greatest priority given to those structures that also have a basement. We propose to drill borings alongside/adjacent to the foundations to access soils at a depth immediately beneath but not deeper than 5 feet below the foundation and collect vapor samples, if soil is confirmed beneath the foundation depth. Soil vapor sampling standard procedures using direct push systems and summa canisters are described in Attachment B.

Using a low profile direct push/hydraulic rig (e.g. a "Bobcat-type rig" or other) a boring will be completed at a location immediately adjacent to the structure. The existence of soil at a depth equivalent to immediately beneath the structure slab or basement depth will be determined in the field. If soil at the appropriate depth is confirmed, we would proceed to collect a vapor sample. Soil vapor samples will be collected at discrete depths using an expendable point, an expendable point holder, a PRT adapter and tubing. The Post Run Tubing System (PRT) is an ideal tool and allows for collecting soil vapor samples quickly and easily at the desired sampling depth. O-ring connections enable the PRT system to deliver a vacuum-tight seal that prevents sample contamination from up hole, and assures that the sample is taken from the desired depth at the bottom of the hole.

The expendable point will be placed in the expendable point holder, which in turn will be attached to a drive rod, and driven to depth. The drive rod and expendable point holder will be retracted, separating the expendable point from the point holder, and creating the desired void in the soil. A PRT adapter and tubing will be advanced down the inner rods and secured to the expendable point holder. The tubing at the surface will be attached to the Vacuum/Volume System on the Geoprobe rig to purge the line and draw a sample. Teflon or polyethylene tubing will be used to draw samples. The used tubing will be discarded after collecting each sample. A regulator is placed in-line to maintain a 200 cc (ml) per min flow rate while purging or collecting

soil gas samples. Once the line has been purged, samples will be extracted from the line using a summa canister and submitted to the lab for analysis.

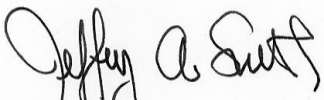
All soil vapor samples will be analyzed by STL Laboratory using Method TO-15 as specified in "Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air", EPA/625/R-96/010b, second edition, January 1999. The target compound list (TCL) and priority pollutant list (PPL, excluding acrolein, acrylonitrile, and 2-chlorethyl vinyl ether) are subsets of the compound list that is targeted by this method. TO-15 is well suited to this vapor intrusion assessment because it provides analytical results for a long list of compounds and achieves much lower detection limits. The analytical results will be reviewed, compiled, validated and compared to EPA and PADEP indoor air screening criteria to assess potential vapor intrusion risks.

CLOSURE

This letter memorializes the significant efforts Harley-Davidson has expended since October 2003 to responsibly assess the vapor intrusion pathway relevant to the York, Pennsylvania facility. In spite of the all the conservative analyses and abundant supporting data and even though EPA approved the Human Health EIs for the site in September 2005, Harley-Davidson continues to proceed responsibly and in good faith to re-affirm that there is no risk to human health via the vapor intrusion pathway. If you have any questions or should you wish to discuss our proposed inventory and investigation along the northeast property boundary area, please call.

Very Truly Yours,

LANGAN ENGINEERING & ENVIRONMENTAL SERVICES



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ATTACHMENT A

Chronology of EPA Comments and Harley-Davidson Responses

Vapor Intrusion Pathway Assessment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

April 18, 2005

Ms. Sharon Fisher
Harley-Davidson Motor Company Operations, Inc.
1425 Eden Road
York, Pennsylvania 17402

Subject: Indoor Vapor Pathway Screening Assessment

Dear Ms. Fisher,

Please find below EPA comments on an Indoor Vapor Pathway Screening Assessment for Harley-Davidson Motor Company Operations Inc., York, Pennsylvania, dated March 2005, as prepared by Langan, Inc. As discussed, this report will be considered in evaluating the RCRA Corrective Action Environmental Indicator of human exposure control for this facility.

EXECUTIVE SUMMARY

Second sentence in first paragraph should be replaced with the following: "This pathway was assessed for both offsite residences and onsite buildings."

Suggest sixth paragraph read as follows after the first sentence: "In the case of onsite buildings, the vapor concentrations were compared to generic non-residential screening levels which were developed as part of this assessment. Where the soil vapor concentrations exceeded the identified generic screening levels, the Johnson and Ettinger (J&E) Model for Subsurface Vapor Intrusion was used to predict indoor air concentrations. This modeling included the use of site-specific data, including physical soil property values derived from onsite soil sampling."

The following additional paragraphs should be added:

"J&E modeling using the subject soil vapor concentrations and site-specific data predicted that one (1) out of the twenty-five (25) soil vapor concentrations would result in an indoor air concentration exceeding the 10-5 incremental carcinogenic risk criteria identified in the draft EPA guidance of 2002. In this one case, the residential indoor air concentration of trichloroethylene (TCE) was predicted to be 0.69 ug/m3, as compared to the criteria of 0.22 ug/m3.

Since the site-specific model inputs for vadose zone soil water filled porosity were derived from field data which may not necessarily be fully representative of site conditions, modeling was also performed using the default value for this input. In this case, the model predicted that four (4) of the twenty-five (25) soil vapor samples would result in indoor air concentrations exceeding the 10-5 risk criteria. The predicted residential indoor air concentration of TCE referenced above would increase from 0.69 ug/m3 to 1.68 ug/m3. The predicted indoor air concentration of TCE in the three additional cases would range from 0.245 ug/m3 to 0.65 ug/m3.

The results of this assessment will be considered in the evaluation of human exposure control (a RCRA Environmental Indicator) and the scoping of additional investigation work at the Harley-Davidson, York facility."

1.0 INTRODUCTION

First paragraph, third sentence should read: "...for administrative or similar purposes were assessed."

First paragraph, last sentence: Delete.

After the first sentence, the second paragraph should read as follows: "This report provides the findings of work outlined in an Indoor Vapor Pathway Screening Assessment Workplan of October 2003."

2.0 BACKGROUND AND PRELIMINARY SCREENING ASSESSMENT

In identifying "key facts and/or assumptions", it is indicated "...there are no known impacts of VOCs to unsaturated soils in the vicinity of the northeastern and southeastern property boundaries...". While investigations to date have not confirmed elevated VOCs in these unsaturated soils, waste solvents have reportedly been applied in the vicinity of the investigated soils to control weed growth . In this case, it is more appropriate to simply indicate that, for purposes of this assessment, it is assumed the saturated zone is the source of VOCs."

Under "key facts and assumptions", the distance between groundwater and ground surface in residential areas may be less than the assumed 20' to 30'. While depth to groundwater in monitoring well MW-64S in the SPBA has been measured at 30', downgradient residences within 200' are 20' to 30' lower in elevation, suggesting that depth to groundwater under these residences may be less than 30'. In the NPBA, depth to groundwater in MW-18S and MW-18D has been measured at 8.1' and 5.7' bgs. Based on the location of these monitoring wells, depth to groundwater under certain residences next to the NPBA may be less than 20'.

2.2 Tier I Screening Assessment

First paragraph, next to last sentence, delete "...that USEPA deems appropriate for evaluating environmental indicators under RCRA."

3.0 Soil Vapor Sample Collection /Analysis

Clearly indicate that soil samples for analysis of physical soil properties were collected concurrently with soil vapor samples.

3.1 Soil Vapor Qualitative Filed Analysis - Membrane Interface Probe

Second paragraph, first sentence: Should read "...to guide selection of locations for Summa canister sampling ...".

Table 1A - NPBA

It is notable that no summa samples were collected at the two locations with the highest TCE area counts. The highest TCE area count (15074) was in NE_SB16 at 0-5'. No deeper MIP sample was collected at this location . It is notable that substantial levels of TCE and PCE were reported for groundwater in this area by R.E. Wright in 1987. The second highest TCE area count was obtained at NE_SB04. A summa sample reportedly could not be collected at this location due to high moisture levels.

Table 1B - SPBA

The MIP (and summa) results for SE_SB01 indicate a decrease in VOCs with depth, suggesting the detected VOCs may be from unsaturated soils rather than groundwater. Further investigation of unsaturated soil should be considered for this area.".

Table 1C - On-Site Buildings

It is notable that no summa sample could be collected at B11_SB01 at Building 11, the location with the highest TCE area count, and that no summa samples were otherwise collected at Building 11.

For B07_SB01, the rationale for summa sample collection is indicated as "Highest Total DCA concentration". However, the total DCA area count for this sample was only 10.9. Please indicate actual rationale.

3.2 Focused Soil Vapor Quantitative Analysis - Summa Canister Sampling

Text should note that samples for physical property analysis were collected concurrently with the summa samples (if this was the case).

Third paragraph should read as follows: "The rationale for the location and depth of the Summa Canister samples is provided in Tables 1A, 1B, and 1C, while the location of these samples, as well as samples for physical property analysis, are provided in Figure 4."

The first sentence of the fourth paragraph should read: "Soil vapor sampling with a Geoprobe direct-push rig and Summa canisters commenced at the Southeast Property boundary area on December 16th after precipitation prevented planned sampling on December 13th, 14th and 15th."

The fourth paragraph indicates three (3) vapor samples and a duplicate were collected from the SPBA after three days of precipitation. Assuming samples for soil property analyses at these locations were also collected on this date, the results for pore water saturation for the subject soil locations may not be representative.

Sixth paragraph: Given the referenced high precipitation levels in 2004, again, the results of pore water saturation in this case may not be representative.

Seventh paragraph: It is indicated that over a three day period starting on July 12, 2004, that "...a total of 29 soil vapor samples were attempted but 16 of the 29 samples were able to be collected successfully." Does this mean that out of the total samples originally planned based on the MIP results, that thirteen samples were never collected? Overall, how many samples were originally planned for each area based on the MIP data review and how many samples were actually collected in each area?

Eighth paragraph: Again, due to reasons discussed above, the pore water saturation analytical results may not be representative.

4.1 Evaluation of Preferential Pathways

Second paragraph: It is suggested that there are no (subsurface) utilities between the NPBA and residences across the street from the NPBA. However, assuming these residences are connected to a public water supply, aren't there water supply lines between the NPBA and the residences ? Are there public sewer lines in this area?

While the stormwater sewer extending offsite from the far southeast corner of Harley-Davidson property may not provide a preferential pathway directly into homes, this subsurface utility may provide a preferential pathway for transport of soil gas from the property to offsite areas.

4.2 Selection/Derivation of Relevant and Applicable Soil Vapor Screening Criteria

First paragraph, last sentence should read: "At this generic screening phase, criteria corresponding to a 10-4 carcinogenic risk level were utilized for TCE."

4.3 Generic Screen

The intent of the reference to "generally" in the first sentence is unclear. The exceptions should be noted or if there are no exception, the reference to "generally" deleted.

4.3.1 On-Site Building Areas

Table 2C

It is notable that the maximum detected concentration of TCE was from B08SB02 at Building 8 and that only one sample was collected at Building 8.

4.3.3 NPBA

Table 2A

The PCE result for NESB01 should be shaded.

4.3.1 Onsite Building Areas

It is understood that, due to the constraints presented by subsurface utilities, that the number of samples that could be collected in the building area was limited. Nonetheless, due to the low number of samples, the available soil vapor results may not be representative. For example, the nature and extent of VOCs in soil vapor in the vicinity of the maximum detection is of interest.

4.4 Semi-Site Specific Screen

Suggest this section read as follows: "While the generic screen considers just contaminant concentrations, the semi-site specific screen in the draft EPA guidance estimates the contaminant attenuation from soil gas to indoor air based on the depth to the soil gas source from the base of the foundation and the soil type (see Figure 3a in the draft EPA guidance). This semi-site

specific screen can be explicitly applied when the soil gas source is more than 1.5 meters from the foundation. However, in this case, assuming a default basement depth of 2 meters, the depth of the soil gas source from basement is assumed to be less 1.5 meters. Also, Figure 3a does not provide for the use of the site-specific soil physical property data which is available in this case. Since site-specific J&E modeling can readily accomodate this data, this assessment proceeds directly from the generic screen to site-specific modeling."

6.0 Tier III- Site Specific Vapor Intrusion Modeling

For the NESB-15, the TCE concentration in the duplicate sample at this location, 440 ug/l, should be used in the modeling instead of 280 ug/l.

For comparison purposes, modeling should also be performed using the default value vadose zone soil water-filled porosity of 0.103 for a sandy loam, the reported native soil for the facility. Text language/findings suggested below reference the model results, per our calculations, using this default value.

6.2.4 Pore Water Saturation

The following paragraph should be added to the end of this section:

"The vadose zone water-filled soil porosity values derived from site-specific data differ from the J&E model default value for this parameter. In particular, while the default value for sandy loam, the native soil for the facility, is 0.103, the input site-specific values for this parameter in the site-specific modeling are 0.250589 for the residential areas (NPBA and SPBA) and up to 0.336 for the onsite buildings. This difference may have been due to the relatively wet conditions at the time of the sampling for physical soil properties."

6.3 Model Results

The text should indicate that the predicted model results are compared to 10-5 indoor air criteria for all compounds, including TCE.

Table 3- The "USEPA Screening Levels" for TCE in this table should correspond to 10-5 risk, i.e., 0.22 ug/m3 for residential and 0.37 ug/m3 for non-residential. The result of modeling using the default value for vadose zone soil water-filled porosity should also be included in this or a similar table.

The text should indicate that, when using site-specific derived value water filled soil porosity, the

model predicted that one (1) out of twenty-five (25) of the soil vapor samples would exceed the subject indoor air screening criteria and that, in this case, the predicted level would be 0.69 ug/m3 for vapor sample NESB15 as compared to.the criteria of 0.22 ug/m3. (Note: This is our calculation of the predicted level based on 440 ug/m3 in the soil vapor at this location rather than 280 ug/m3.)

The conclusions of modeling using the default value for water-filled soil porosity should also be summarized. Per our calculations, the conclusions for the SPBA would be that two (2) out of eleven (11) soil vapor samples would exceed the 10-5 residential indoor air criteria for TCE of 0.22 ug/m3 - 0.245 ug/m3 at SESB02A and 0.362 ug/m3 at SESB03. For the onsite buildings, we calculated that one (1) out of five (5) locations would exceed the 10-5 non-residential criteria for TCE of 0.37ug/m3 - B08SB02, with a level of 0.65 ug/m3. For the NPBA, we calculated that there would be no additional exceedances, but that the predicted indoor air concentration for NESB15 would increase from 0.69 ug/m3 to 1.68 ug/m3.

7.0 FINDINGS AND CONCLUSIONS

Third paragraph should be replaced with the following:

"Based on the available soil vapor analytical data and using the derived site-specific value for vadose zone water filled soil porosity, with one exception, the J&E modeling predicted indoor air concentrations for offsite residences and onsite buildings would not exceed indoor air concentrations corresponding to a 10-5 incremental carcinogenic risk as identified in draft EPA guidance issued in 2002. In the case of the one exception, a level of 0.69 ug/m3 TCE was predicted for one location in the north property boundary, as compared to the criteria of 0.22 ug/m3.. In no case did a predicted indoor air concentration for onsite buildings using the site-specific soil porosity value exceed the calculated non-residential criteria for a 10-5 risk.

Using the default value for water-filled soil porosity, the model predicted two (2) out of eleven (11) soil vapor samples in the south property boundary area would exceed the 10-5 residential indoor air criteria for TCE of 0.22 ug/m3 - 0.245 ug/m3 at SESB02A and 0.362 ug/m3 at SESB03. For the onsite buildings, one (1) out of five (5) locations would exceed the 10-5 non-residential criteria for TCE of 0.37ug/m3 - B08SB02, with a level of 0.65 ug/m3. For the NPBA, there would be no additional exceedances, but the predicted indoor air concentration for NESB15 would increase from 0.69 ug/m3 to 1.68 ug/m3.

The results of this assessment and the associated J&E modeling will be considered in evaluating whether human exposure at the facility is under control (a RCRA environmental indicator) and in the scoping of additional investigation work at the facility."

Please let us know if you have any questions regarding the comments above. We look forward to discussing these comments with you at our meeting of April 21.

Sincerely,

Darius Ostrauskas
RCRA Corrective Action
Project Manager

cc: Pamela Trowbridge, PADEP
Nicki Fatherly, USACE

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July 18, 2005

Mr. Darius Ostrauskas
Project Manager
U.S. EPA, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

RE: Response to USEPA's Comments on the Indoor Vapor Pathway Screening Assessment, Supplemental RI Report
Harley-Davidson Motor Company, Operations, Inc., York, PA Facility
Langan Project No. 1406706

Dear Mr. Ostrauskas:

Harley-Davidson Motor Company Operations, Inc. (Harley-Davidson) has reviewed the USEPA's April 18, 2005 comment letter and prepared a response to comments on the Indoor Vapor Pathway Screening Assessment Supplemental RI Report that was submitted to the USEPA on March 11, 2005. This response and its format are consistent with our discussions during our April 21, 2005 meeting. Revisions made to the report in response to USEPA's comments are included in the revised final report provided under separate cover. A revised table of contents to reflect report revisions, the addition of Appendix K, and revised tables are also incorporated in the revised final report. As agreed at our April 21, 2005 meeting, this comment response letter will be included in the final report as Appendix K. For convenience, the specific USEPA comments are reiterated below and are followed by our responses in bold text.

EXECUTIVE SUMMARY

1._ Second sentence in first paragraph should be replaced with the following: "This pathway was assessed for both offsite residences and onsite buildings."

In our professional opinion, the suggested change in text does not describe the assessment areas as accurately and effectively as the existing text and may be unintentionally misleading. It is important to distinguish that only certain on-site buildings that may not involve OSHA-regulated activities were assessed. We do however recognize that the word "not" is a typographical error that has been corrected in the revised final report.

2. Suggest sixth paragraph read as follows after the first sentence: "In the case of onsite buildings, the vapor concentrations were compared to generic non-residential screening levels which were developed as part of this assessment. Where the soil vapor concentrations exceeded the identified generic screening levels, the Johnson and Ettinger (J&E) Model for Subsurface Vapor Intrusion was used to predict indoor air concentrations. This modeling included the use of site-specific data, including physical soil property values derived from onsite soil sampling."

The following additional paragraphs should be added:

"J&E modeling using the subject soil vapor concentrations and site-specific data predicted that one (1) out of the twenty-five (25) soil vapor concentrations would result in an indoor air concentration exceeding the 10^{-5} incremental carcinogenic risk criteria identified in the draft EPA guidance of 2002. In this one case, the residential indoor air concentration of trichloroethylene (TCE) was predicted to be 0.69 ug/m3, as compared to the criteria of 0.22 ug/m3.

Since the site-specific model inputs for vadose zone soil water filled porosity were derived from field data which may not necessarily be fully representative of site conditions, modeling was also performed using the default value for this input. In this case, the model predicted that four (4) of the twenty-five (25) soil vapor samples would result in indoor air concentrations exceeding the 10^{-5} risk criteria. The predicted residential indoor air concentration of TCE referenced above would increase from 0.69 ug/m3 to 1.68 ug/m3. The predicted indoor air concentration of TCE in the three additional cases would range from 0.245 ug/m3 to 0.65 ug/m3.

The results of this assessment will be considered in the evaluation of human exposure control (a RCRA Environmental Indicator) and the scoping of additional investigation work at the Harley-Davidson, York facility."

The suggested changes to the executive summary (sixth paragraph through the end) are noted, but we believe that the existing text adequately and appropriately describes the assessment criteria and findings. The use of site-specific data is more representative and appropriate than using default values inherent in the model. We do not see value in discussing the range of hypothetical results using default input values when site specific values have been determined. It should be clarified that the physical soil properties (including water/air filled porosity) were determined using soil samples collected during the drier months in July and August 2004 concurrent with the collection of most of the soil vapor samples used in the vapor model. Additional evaluation requested by USEPA (i.e. TCE vs. risk=10^{-5} and substituting the site specific value with the default value for vadose zone soil water filled porosity) was performed and is summarized in Attachment 1. The results from this additional evaluation do not substantively change the conclusions that have been drawn concerning the vapor pathway associated with the site and do not warrant further discussion in the body of the report.

1.0 INTRODUCTION

3. First paragraph, third sentence should read: "...for administrative or similar purposes were assessed."

The suggested change in text is noted and this clarification has been made in the revised final report.

4. First paragraph, last sentence: Delete.

We are not clear on the basis for USEPA's suggested deletion. The sentence is factual and we believe it is important to maintain the reference to the environmental indicators process in the context of that sentence.

5. After the first sentence, the second paragraph should read as follows: "This report provides the findings of work outlined in an Indoor Vapor Pathway Screening Assessment Workplan of October 2003."

Again, we are unclear on USEPA's rationale for the suggested revision. The reference to the October 2003 approved workplan is already captured in the existing report text.

2.0 BACKGROUND AND PRELIMINARY SCREENING ASSESSMENT

6. In identifying "key facts and/or assumptions", it is indicated "...there are no known impacts of VOCs to unsaturated soils in the vicinity of the northeastern and southeastern property boundaries...". While investigations to date have not confirmed elevated VOCs in these unsaturated soils, waste solvents have reportedly been applied in the vicinity of the investigated soils to control weed growth. In this case, it is more appropriate to simply indicate that, for purposes of this assessment, it is assumed the saturated zone is the source of VOCs."

As detailed in the July 2002 Interim Site-Wide Remedial Investigation Report prepared by Langan for Harley-Davidson, several phases of investigation of the northern, eastern and southern property boundary (Perimeter Road) have been conducted to investigate the potential impacts to unsaturated soils where waste solvents were reportedly applied. Soil sampling locations were determined from PID concentration measurements obtained from 245 active (whole air) soil gas samples that were collected from 19 to 22 May 1998. Half of the samples were collected beneath the site's perimeter road, while the other half was collected between the road and the fence.

Based on the previous soil gas sampling results for the Perimeter area, Langan selected 13 locations from which soil samples were collected and submitted for laboratory analyses. The 13 sampling locations coincided with the 13 highest PID concentration measurements obtained from the previous soil gas survey. All thirteen soil samples were collected from 1.5 to 2.0 feet bgs.

None of the soil samples collected during the previous remedial investigation activities contained VOCs at concentrations above the USEPA Industrial RBCs. Based on the abundance of data collected to investigate soil conditions along the Perimeter Road, we agree that it is appropriate to assume that the source of VOCs in soil vapor along the property boundary areas assessed by the vapor pathway assessment is the saturated zone. Based on available data, there is no known source of VOCs in the unsaturated soils that accounts for the soil vapor concentrations detected along the Perimeter Road area.

7. Under "key facts and assumptions", the distance between groundwater and ground surface in residential areas may be less than the assumed 20' to 30'. While depth to groundwater in monitoring well MW-64S in the SPBA has been measured at 30', downgradient residences within 200' are 20' to 30' lower in elevation, suggesting that depth to groundwater under these residences may be less than 30'. In the NPBA, depth to groundwater in MW-18S and MW-18D has been measured at 8.1' and 5.7' bgs. Based on the location of these monitoring wells, depth to groundwater under certain residences next to the NPBA may be less than 20'.

The observed depth to groundwater in certain wells along the NPBA has been measured at depths of about 6 feet indicating that the depth to groundwater beneath certain residences near the NPBA may be less than 20 feet. Also, we acknowledge that properties downgradient of the SPBA are at lower topographic elevations and depths to groundwater beneath downgradient properties may or may not be less than 30 feet. However, in terms of the site specific vapor pathway assessment, the soil vapor modeling uses the measured VOC concentration in soil vapor at each sample location as the vapor source concentration which originates from the groundwater/saturated soils. The conceptual approach and inherent assumptions of the J&E model are very conservative. The model assumes an infinite source and no chemical transformation of VOCs which are two of the considerably conservative aspects of the model. The conceptual approach to the site includes a conservative assumption that the off-site residential buildings are situated directly over the perimeter soil-vapor sample locations which are expected to be conservative concentrations because the source concentrations in the on-site groundwater are expected to be higher than groundwater concentrations beneath off-site properties.

2.2 Tier I Screening Assessment

8. First paragraph, next to last sentence, delete "...that USEPA deems appropriate for evaluating environmental indicators under RCRA."

The 10^{-5} risk level is cited in the USEPA Draft Vapor Intrusion Guidance (November 2002) as appropriate for evaluating Environmental Indicators and we believe it is important to include that reference. We propose to revise the final report text to cite the USEPA Draft Vapor Intrusion Guidance as the reference for applying 10^{-5} risk level for evaluating environmental indicators.

3.0 SOIL VAPOR SAMPLE COLLECTION /ANALYSIS

9. Clearly indicate that soil samples for analysis of physical soil properties were collected concurrently with soil vapor samples.

We acknowledge the suggested clarification. The following sentence has been inserted in the revised final report. "Soil samples for soil physical property analyses and soil-gas samples were collected during the drier summer months of July and August 2004. "

3.1 Soil Vapor Qualitative Field Analysis - Membrane Interface Probe

10. Second paragraph, first sentence: Should read "...to guide selection of locations for Summa canister sampling ...".

The suggested change in text is noted, and this revision has been made to Section 3.1 of the revised final report.

Table 1A - NPBA

11. It is notable that no summa samples were collected at the two locations with the highest TCE area counts. The highest TCE area count (15074) was in NE_SB16 at $0^{-5'}$. No deeper MIP sample was collected at this location. It is notable that substantial levels of TCE and PCE were reported for groundwater in this area by R.E. Wright in 1987. The second highest TCE area count was obtained at NE_SB04. A summa sample reportedly could not be collected at this location due to high moisture levels.

As agreed during discussions with USEPA prior to collecting the soil vapor samples and as recommended in soil vapor sampling guidance (see Appendix E of EPA's Draft Soil Vapor Guidance), no soil vapor samples were collected at depths above 5 feet below ground surface because of the potential for atmospheric interference that could result in erroneous or ambiguous results.

Table 1B - SPBA

12. The MIP (and summa) results for SE_SB01 indicate a decrease in VOCs with depth, suggesting the detected VOCs may be from unsaturated soils rather than groundwater. Further investigation of unsaturated soil should be considered for this area."

We acknowledge that the MIP results indicate a decrease in VOC concentrations with depth at sample location SE_SB-01 but we do not necessarily agree that these results indicate the source for VOCs in soil vapor at this location is from unsaturated soils rather than groundwater. Vapor transport in the unsaturated zone is a complex process that involves several physicochemical variables relating to soil type, physical and chemical characteristics, and multiple phases (air, liquid, solid) that affect vapor transport processes. Again, we reiterate that a multi-phase investigation of soil conditions along the northern, eastern and

southeastern property boundaries (Perimeter area) was previously conducted and is described in greater detail in the July 2002 Draft Interim Site-wide Remedial Investigation Report. Those results do not indicate elevated VOC concentrations in unsaturated soils along the property boundary areas.

Table 1C - On-Site Buildings

13. It is notable that no summa sample could be collected at B11_SB01 at Building 11, the location with the highest TCE area count, and that no summa samples were otherwise collected at Building 11.

As noted on Table 1C soil moisture levels (apparently high groundwater levels) near Building 11 resulted in the inability to obtain the soil vapor samples attempted at depths of 5-10 ftbgs and 10-15 ftbgs. Given the apparent shallow depth to groundwater measured in the borehole drilled to facilitate collection of summa canister vapor samples at B11_SB01, any attempts to collect vapor samples at other locations in the vicinity of Building 11 would likely be equally unsuccessful.

14. For B07_SB01, the rationale for summa sample collection is indicated as "Highest Total DCA concentration". However, the total DCA area count for this sample was only 10.9. Please indicate actual rationale.

The rationale was in part based on the "highest Total DCA concentration" relative to all other MIP samples collected near Building 7. The rationale to collect a sample at B07_SB01 was also based on the detection of elevated (relative to other data near Building 7) PCE (1500 area count) concentrations in the shallow, near surface (0-5 ftbgs) MIP sampling interval at this location. These statements will be added to Table 1C to clarify the rationale for collecting samples B07_SB01.

3.2 Focused Soil Vapor Quantitative Analysis - Summa Canister Sampling

15. Text should note that samples for physical property analysis were collected concurrently with the summa samples (if this was the case).

As indicated in paragraphs #7 and #8 of Section 3.2, soil samples for physical properties analysis were collected at the same time as summa canister samples collected in July and August of 2004.

16. Third paragraph should read as follows: "The rationale for the location and depth of the Summa Canister samples is provided in Tables 1A, 1B, and 1C, while the location of these samples, as well as samples for physical property analysis, are provided in Figure 4."

The suggested change in text is acknowledged and has been made in the revised final report text. However, we believe it is important to acknowledge in the report that Harley-Davidson provided the MIP data and proposed summa canister sampling rationale to USEPA to seek their concurrence before collecting those samples.

17. The first sentence of the fourth paragraph should read: "Soil vapor sampling with a Geoprobe direct-push rig and Summa canisters commenced at the Southeast Property boundary area on December 16th after precipitation prevented planned sampling on December 13th, 14th and 15th."

The suggested change in text is not completely accurate. There was no precipitation on December 15th but soil vapor sampling did not occur on December 15th to allow a 24-hour period of no significant precipitation before collecting soil vapor samples on December 16th.

18. The fourth paragraph indicates three (3) vapor samples and a duplicate were collected from the SPBA after three days of precipitation. Assuming samples for soil property analyses at these locations were also collected on this date, the results for pore water saturation for the subject soil locations may not be representative.

Samples for soil property testing were collected during dry conditions in July and August 2004 (not in December 2003).

19. Sixth paragraph: Given the referenced high precipitation levels in 2004, again, the results of pore water saturation in this case may not be representative.

As a matter of clarification, the statement in question incorrectly referred to high precipitation levels in December 2003 as "2004". The correct year, 2003, will be inserted in the revised final report. Pore water saturation was measured in samples collected during drier summer months of July and August 2004.

20. Seventh paragraph: It is indicated that over a three day period starting on July 12, 2004, that "...a total of 29 soil vapor samples were attempted but 16 of the 29 samples were able to be collected successfully." Does this mean that out of the total samples originally planned based on the MIP results, that thirteen samples were never collected? Overall, how many samples were originally planned for each area based on the MIP data review and how many samples were actually collected in each area?

To be correct and more clear, the following paragraph will be inserted in the revised final report to replace the previous text: "Over the three day period starting on July 12, 2004, a total of twenty-five locations were proposed for soil vapor sampling, nineteen locations were collected successfully but samples at six locations could not be successfully obtained. The 25 sample locations planned in July 2004 included eleven locations along the Northeast Property Boundary, eleven locations along the Southeast Property Boundary, and three locations near on-site Building Areas. In July 2004, attempts were also made to collect samples

from four other locations where samples could not be successfully collected in December 2003."

Of the eleven locations along the Northeast Property Boundary, eight samples were collected successfully; three samples, NESB08A, NESB08B, and NESB04 could not be successfully obtained due to apparent moisture at the desired sample depth.

Along the Southeast Property Boundary, ten of the eleven samples were successfully collected. One sample, SESB08B, could not be obtained because of apparent moisture at that location.

At the on-site building locations one sample, B08SB02 was successful. Samples B11SB01A and B11SB01B could not be successfully obtained because of high groundwater levels confirmed using a water-level indicator probe in the borings drilled to facilitate collecting vapor samples at this location.

The following sentences will be inserted at the beginning of paragraph nine of Section 3.3 to provide a clear and accurate summary of the summa canister samples that were planned and ultimately collected: "In total, of all the 33 summa canister samples planned and attempted in December 2003 and July-August 2004, only eight samples could not be collected successfully (NE_SB08A, NE_SB08B, NE_SB04, SE_SB06A, SE_SB06B SE_SB08B, B11_SB01A, and B11_SB01B) because of an inability to draw a sufficient vacuum using summa canisters under existing site conditions. "

21. Eighth paragraph: Again, due to reasons discussed above, the pore water saturation analytical results may not be representative.

Again, the physical soil properties were determined using soil samples collected in the drier months of July and August 2004 not December 2003 and the pore water saturation data is reflective of dry soil conditions which adds to the degree of conservatism in the site specific analysis.

4.1 Evaluation of Preferential Pathways

22. Second paragraph: It is suggested that there are no (subsurface) utilities between the NPBA and residences across the street from the NPBA. However, assuming these residences are connected to a public water supply, aren't there water supply lines between the NPBA and the residences? Are there public sewer lines in this area?

While the stormwater sewer extending offsite from the far southeast corner of Harley-Davidson property may not provide a preferential pathway directly into homes, this subsurface utility may provide a preferential pathway for transport of soil gas from the property to offsite areas.

There are buried utilities beneath the Township roadway(s) (Paradise Road directly north, City View Road north east and W. Mt Herman Blvd. east) adjacent to the northeast property boundary but these utilities do not extend from or intersect the Harley-Davidson property. Near the SPBA, the off-site residential area (Canterbury Lane) is transected by a stormwater sewer utility that from the on-site SPBA and is topographically lower than the site. It is possible that soil vapors could migrate to this buried sewer line but the vapors would tend to rise to higher elevations along the entire length of the backfill surrounding the utility and could preferentially migrate back toward the Harley-Davidson site. While buried utilities can serve as pathways for preferential transport they can also intercept and/or diffuse vapors that could otherwise migrate to other areas. Further, our modeling approach conservatively assumes that the off-site building is situated directly over the location where soil-gas samples were taken and over higher source concentrations in groundwater than would be expected off-site. For this analysis, consideration of the hypothetical effects of potential preferential pathways that may be related to off-site utilities is effectively nullified by the conservative assumption that the off-site occupied buildings are situated directly above the soil vapor source areas measured on-site.

4.2 Selection/Derivation of Relevant and Applicable Soil Vapor Screening Criteria

23. First paragraph, last sentence should read: "At this generic screening phase, criteria corresponding to a 10^{-4} carcinogenic risk level were utilized for TCE."

The suggested change in text is noted and has been made in the revised final report.

4.3 Generic Screen

24. The intent of the reference to "generally" in the first sentence is unclear. The exceptions should be noted or if there are no exceptions, the reference to "generally" deleted.

There are no exceptions and the word "generally" has been deleted in the revised final report text.

4.3.1 On-Site Building Areas

Table 2C

25. It is notable that the maximum detected concentration of TCE was from B08SB02 at Building 8 and that only one sample was collected at Building 8.

The approved workplan indicated that based on screening results from

multiple samples collected using the MIP, one summa canister sample biased to the highest concentrations indicated by the MIP results, would be collected and analyzed. Three MIP borings with three sample depth intervals per boring (a total of nine samples) were completed at Building 8.

4.3.3 NPBA

Table 2A

26. The PCE result for NESB01 should be shaded.

We have made the correction and the revised table (Table 2A) will be provided in the revised final report.

4.3.1 Onsite Building Areas

27. It is understood that, due to the constraints presented by subsurface utilities, that the number of samples that could be collected in the building area was limited. Nonetheless, due to the low number of samples, the available soil vapor results may not be representative. For example, the nature and extent of VOCs in soil vapor in the vicinity of the maximum detection is of interest.

We do not agree that the number of samples collected should be considered "low" considering that quantitative summa canister sample collection was based on screening data obtained from several samples collected using MIP data. The approved workplan indicated that based on screening results from multiple samples collected using the MIP, one summa canister sample biased to the highest concentrations indicated by the MIP results, would be collected and analyzed. Note, a total of 17 borings were advanced and 46 intervals were tested using the MIP in borings surrounding the on-site building areas of interest.

4.4 Semi-Site Specific Screen

28. Suggest this section read as follows: "While the generic screen considers just contaminant concentrations, the semi-site specific screen in the draft EPA guidance estimates the contaminant attenuation from soil gas to indoor air based on the depth to the soil gas source from the base of the foundation and the soil type (see Figure 3a in the draft EPA guidance). This semi-site specific screen can be explicitly applied when the soil gas source is more than 1.5 meters from the foundation. However, in this case, assuming a default basement depth of 2 meters, the depth of the soil gas source from basement is assumed to be less 1.5 meters. Also, Figure 3a does not provide for the use of the site-specific soil physical property data which is available in this case. Since

site-specific J&E modeling can readily accommodate this data, this assessment proceeds directly from the generic screen to site-specific modeling."

The suggested change in text is noted but we offer the following slight variation from the suggested revisions. "While the generic screen considers just contaminant concentrations, the semi-site specific screen in the draft EPA guidance estimates the contaminant attenuation from soil gas to indoor air based on the depth to the soil gas source from the base of the foundation and the soil type (see Figure 3a in the draft EPA guidance). This semi-site specific screen can be explicitly applied when the soil gas source is more than 1.5 meters from the foundation. However, in this case, a majority of the shallow soil gas samples collected as part of this assessment are too shallow (less than 1.5 m below the assumed basement foundation). As such, the semi-site specific screen using the soil gas source depth and soil type relationship in Figure 3a of the draft EPA guidance could not be evaluated. Also, Figure 3a does not provide for the use of the site-specific soil physical property data which is available for this site. Since site-specific J&E modeling can readily accommodate the site specific data, this assessment proceeds directly from the generic screen to site-specific modeling."

6.0 TIER III- SITE SPECIFIC VAPOR INTRUSION MODELING

29. For the NESB-15, the TCE concentration in the duplicate sample at this location, 440 ug/l, should be used in the modeling instead of 280 ug/l.

We have made the correction and the revised table (Table 2A). It will be provided in the revised final report.

30. For comparison purposes, modeling should also be performed using the default value vadose zone soil water-filled porosity of 0.103 for a sandy loam, the reported native soil for the facility. Text language/findings suggested below reference the model results, per our calculations, using this default value.

This additional evaluation recommended by USEPA (i.e. substituting the site specific water-filled porosity value with the default value of 0.103 for vadose zone soil) was performed and is summarized in Attachment 1. With the exception of 1,3 butadiene in one sample (NE_SB18), the predicted indoor air concentrations using the default water-filled value indicate no predicted indoor air concentrations above the 10^{-5} (10^{-4} for TCE) relevant screening criteria.

6.2.4 Pore Water Saturation

31. The following paragraph should be added to the end of this section:

"The vadose zone water-filled soil porosity values derived from site-specific data

differ from the J&E model default value for this parameter. In particular, while the default value for sandy loam, the native soil for the facility, is 0.103, the input site-specific values for this parameter in the site-specific modeling are 0.250589 for the residential areas (NPBA and SPBA) and up to 0.336 for the onsite buildings. This difference may have been due to the relatively wet conditions at the time of the sampling for physical soil properties."

Soil samples for soil physical property analysis were collected concurrent with soil-gas samples during the drier summer months of July and August 2004. Additional evaluation recommended by USEPA (i.e. TCE vs. risk=10^{-5} and substituting the site specific value with the default value for vadose zone soil water filled porosity) is summarized in Attachment 1.

6.3 Model Results

32. The text should indicate that the predicted model results are compared to 10^{-5} indoor air criteria for all compounds, including TCE.

Table 3- The "USEPA Screening Levels" for TCE in this table should correspond to 10^{-5} risk, i.e., 0.22 ug/m3 for residential and 0.37 ug/m3 for non-residential. The result of modeling using the default value for vadose zone soil water-filled porosity should also be included in this or a similar table.

The text should indicate that, when using site-specific derived value water filled soil porosity, the model predicted that one (1) out of twenty-five (25) of the soil vapor samples would exceed the subject indoor air screening criteria and that, in this case, the predicted level would be 0.69 ug/m3 for vapor sample NESB15 as compared to he criteria of 0.22 ug/m3. (Note: This is our calculation of the predicted level based on 440 ug/m3 in the soil vapor at this location rather than 280 ug/m3.)

The conclusions of modeling using the default value for water-filled soil porosity should also be summarized. Per our calculations, the conclusions for the SPBA would be that two (2) out of eleven (11) soil vapor samples would exceed the 10^{-5} residential indoor air criteria for TCE of 0.22 ug/m3 - 0.245 ug/m3 at SESB02A and 0.362 ug/m3 at SESB03. For the onsite buildings, we calculated that one (1) out of five (5) locations would exceed the 10^{-5} non-residential criteria for TCE of 0.37ug/m3 - B08SB02, with a level of 0.65 ug/m3. For the NPBA, we calculated that there would be no additional exceedances, but that the predicted indoor air concentration for NESB15 would increase from 0.69 ug/m3 to 1.68 ug/m3.

Additional evaluation recommended by USEPA (i.e. TCE vs. risk=10^{-5} and substituting the site specific value with the default value for vadose zone soil water filled porosity) is summarized in Attachment 1. These results will be included in the revised final report as Appendix K. All predicted indoor air concentrations using the default soil air-filled porosity are below the respective 10^{-5} risk screening level (or 10^{-4} for TCE) except for 1,3 Butadiene at NESB18. The

findings from the re-evaluation of predicted indoor air concentrations for TCE indicate that all results are below the 10^{-5} risk criteria except for the model-predicted result for NESB15; the re-evaluated result for NESB15 is 0.696 ug/m3 which is only slightly above the 10^{-5} residential indoor air criteria of 0.22 ug/m3 for TCE.

7.0 FINDINGS AND CONCLUSIONS

Third paragraph should be replaced with the following:

33. "Based on the available soil vapor analytical data and using the derived site-specific value for vadose zone water filled soil porosity, with one exception, the J&E modeling predicted indoor air concentrations for offsite residences and onsite buildings would not exceed indoor air concentrations corresponding to a 10^{-5} incremental carcinogenic risk as identified in draft EPA guidance issued in 2002. In the case of the one exception, a level of 0.69 ug/m3 TCE was predicted for one location in the north property boundary, as compared to the criteria of 0.22 ug/m3. In no case did a predicted indoor air concentration for onsite buildings using the site-specific soil porosity value exceed the calculated non-residential criteria for a 10^{-5} risk.

Using the default value for water-filled soil porosity, the model predicted two (2) out of eleven (11) soil vapor samples in the south property boundary area would exceed the 10^{-5} residential indoor air criteria for TCE of 0.22 ug/m3 - 0.245 ug/m3 at SESB02A and 0.362 ug/m3 at SESB03. For the onsite buildings, one (1) out of five (5) locations would exceed the 10^{-5} non-residential criteria for TCE of 0.37ug/m3 - B08SB02, with a level of 0.65 ug/m3. For the NPBA, there would be no additional exceedances, but the predicted indoor air concentration for NESB15 would increase from 0.69 ug/m3 to 1.68 ug/m3.

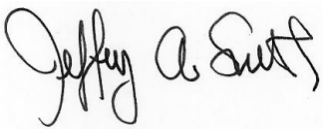
The results of this assessment and the associated J&E modeling will be considered in evaluating whether human exposure at the facility is under control (a RCRA environmental indicator) and in the scoping of additional investigation work at the facility."

Additional evaluation recommended by USEPA (i.e. TCE vs. risk=10^{-5} and substituting the site specific value with the default value for vadose zone soil water filled porosity) is summarized in Attachment 1. Attachment 1 and these results will be provided in Appendix K of the revised final report but will not be added to the conclusions section of the report. We believe that the use of site specific soil properties is more appropriate and representative than using default values for the water-filled porosity that is inherent in the J&E model and we have a higher level of confidence in results obtained using site specific data. Further, USEPA previously acknowledged that there is uncertainty in regard to the cancer slope factor and that the use of 10^{-4} risk criteria for TCE is applicable and appropriate.

If you have any questions or should you require additional information, please call.

Sincerely,

LANGAN ENGINEERING & ENVIRONMENTAL SERVICES



Jeffrey A. Smith
Senior Project Manager

cc: Ms. Sharon Fisher (Harley-Davidson)
Ralph T. Golia P.G.(AMO Environmental Decisions)
Ms. Nicole Fatherly (USACE)
Ms. Pamela Trowbridge (PADEP)

Appendix K – Attachment 1

Supplemental Soil-Gas Data Evaluation

1.0 Introduction

In response to USEPA's April 18, 2005 comments concerning the Indoor Vapor Pathway Screening Assessment performed by Langan Engineering & Environmental Services, Inc. (Langan) for Harley-Davidson Motor Company Operations, Inc., at their York, PA facility (the site), the following supplemental evaluations were completed.

- Evaluate the sensitivity of the USEPA version of the Johnson and Ettinger Vapor Intrusion Model (J&E model) using the default soil air-filled porosity [or, determine predicted indoor air concentrations relative to the higher (more conservative) default air-filled porosity]; and

- Evaluate trichloroethylene (TCE) in soil gas and the predicted indoor air concentrations relative to a screening risk level of 10^{-5}.

2.0 J&E Modeling Using the Default Soil Air-Filled Porosity

Site specific air-filled porosity values in the soil samples collected during the dry months of July and August 2004 at the northeast and southeast property boundaries ranged from 6.31% to 22.2% with an average of 12% of bulk soil volume. Site-specific air-filled porosity values at the on-site building areas ranged from 6.5% to 19.9% with an average of 12.2% of bulk soil volume. The J&E model default air-filled porosity for a sandy loam (representative site soil) is 28.4 % of bulk soil volume, and much higher than actual site specific values (almost one and one half times the high end of the site specific range of values). We believe the site specific air-filled porosity values are most appropriate and representative given that they were determined from actual site soil samples collected during the drier summer months of July and August 2004. Soil analyses were performed using a reliable industry standard test method, American Petroleum Institute API RP-40. At EPA's request to evaluate the model sensitivity to air-filled porosity characteristics, the J&E model was rerun using the default air-filled porosity value in the model.

With one exception for 1,3 Butadiene in one sample (NE_SB18), the predicted indoor air concentrations using the default soil air-filled porosity are all below the 10^{-4} risk criteria for TCE and the 10^{-5} risk criteria for all other VOCs. The results are provided in **Tables K.1 through K.2** and are summarized by compound below.

Chloroform

The highest predicted indoor air concentration for chloroform was 0.0546 ug/m^3 (from SESB03) using site specific air filled porosity. The predicted indoor air chloroform concentration is 0.138 ug/m^3 using the default soil air-filled porosity. Both concentrations are below the residential screening level for chloroform in indoor air of 1.1 ug/m3.

Trichloroethylene

The highest predicted indoor air concentration for TCE was 0.443 ug/m^3 (from NESB15) using site specific air-filled porosity. The predicted indoor TCE concentration is 1.34 ug/m^3 using the default air-filled porosity. Both concentrations are below the residential screening level for TCE in indoor air of 2.2 ug/m^3.

Tetrachloroethylene

The highest predicted indoor air concentration for tertrachloroethylene (PCE) was 2.26 ug/m^3 (from SESB10A-12/16/2003) using site specific air filled porosity. The predicted indoor air PCE concentration is 4.55 ug/m^3 using the default air-filled porosity. Both concentrations are below the residential screening level for PCE in indoor air of 8.1 ug/m^3.

1,3-Butadiene

The highest predicted indoor air concentration for 1,3-butadiene (1,3 Butadiene) was 0.0757 ug/m^3 (from NESB18) using site specific air filled porosity. The predicted indoor air 1,3 Butadiene concentration is 0.125 ug/m^3 using the default air-filled porosity. The value corresponding to the default air-filled porosity is above the residential screening level for 1,3 Butadiene in indoor air of 0.087 ug/m^3.

Dibromochloromethane

The highest predicted indoor air concentration for dibromochloromethane was 0.00985 ug/m^3 (from NESB15) using site specific air filled porosity. The predicted indoor air dibromochloromethane concentration is 0.0501 ug/m^3 using the default air-filled porosity. Both concentrations are below the residential screening level for dibromochloromethane in indoor air of 1 ug/m^3.

cis-1,2-Dichloroethylene

The only predicted indoor air concentration for cis-1,2-dichloroethylene (cis12DCE) was 0.0783 ug/m^3 (from B08SB02) using site specific air filled porosity. Using the default air-filled porosity value, the predicted indoor air cis12DCE concentration is 0.119 ug/m^3. Both concentrations are below the residential screening level for cis12DCE in indoor air, 35 ug/m^3.

3.0 Evaluation of TCE Concentrations in Soil Gas and Indoor Air vs. 10-5 Risk Criteria

The predicted indoor air results for TCE obtained and presented in Tables 3A, 3B, and 3C of the Vapor Pathway Assessment Report were compared to the 10-5 screening criteria for TCE. Based on this comparison, the following results (**Table K.4**) are below the USEPA target shallow soil gas criteria for risk = 10^{-4} (22 ug/m^3 for residential and 37 ug/m^3 ^{for} non-residential), but above the same criteria for risk = 10^{-5} (2.2 ug/m^3 for residential and 3.7 ug/m^3 for non-residential):

Northeast Property Boundary

- NESB00 at 7.5 ug/m^3
- NESB01 at 19 ug/m^3
- NESB06 at 2.7 ug/m^3
- NESB10A at 18 ug/m^3
- NESB10B at 16 ug/m^3
- NESB18 at 13 ug/m^3

Southeast Property Boundary

- SESB01 at 10 ug/m^3
- SESB08A at 2.2 ug/m^3
- SESB11A at 18 ug/m^3

On-Site

- None of the re-evaluated data for the on-site building areas were found to exceed the non-residential indoor air 10^{-5} risk criteria for TCE (2.2 ug/m^3).

To be complete, these results were further evaluated using the J&E model and site specific soil properties in the same manner as described in Section 6.0 of the Vapor Pathway Assessment Report. The resultant predicted indoor air concentrations for TCE in soil-gas at concentrations above the risk=10^{-4} screening level were compared to the 10^{-5} indoor air screening criteria.

Model assumptions and predicted indoor air concentrations are summarized in **Tables K.5 through K.7**. All predicted indoor air concentrations are below the USEPA target indoor air criterion of 0.22 ug/m^3 at risk = 10^{-5}, except for sample NESB15.

5.0 Conclusion

All indoor air concentrations predicted using the default soil air-filled porosity are below the respective 10^{-5} risk screening level (risk equal to 10^{-4} for TCE) except for 1,3 Butadiene at NESB18.

The results after re-evaluating TCE relative to the 10^{-5} criteria indicate all predicted indoor air concentrations for TCE are below the 10^{-5} indoor air screening criteria except the result for sample NESB15.

Table K.1
Response to USEPA Comments
J&E Results Using Default Air Filled Prosity for Sandy Loam
Northeast Property Boundary

	USEPA Screening Levels	Sample ID Sample Depth Interval (ft) Depth Below Foundation (ft)	NESB00 5-10 1	NESB01 5-10 1	NESB10B 10-14 5.5	NESB13A 5-10 1	NESB13B 10-15 6	NESB15 5-7 0.5*	NESB18 5-10 1
Depth below grade to enclosed space floor †		cm	200						
Soil gas sampling depth below grade		cm	228.6	228.6	365.76	228.6	381	213.36	228.6
Average soil temperature		°C	11.1						
Vadose zone soil vapor permeability		cm^2	1.21E-10						
Vadose zone soil dry bulk density		g/cm^3	1.7029						
Vadose zone soil total porosity		unitless	0.377562						
Vadose zone soil water-filled porosity		unitless	0.093562						
Vadose zone DEFAULT air-filled porosity		**unitless**	**0.284**						
Average vapor flow rate into building		cm^3/sec	83.3						
Chloroform									
Soil-Gas Concentration	11	Input	NA	NA	NA	NA	NA	NA	NA
Model Predicted Indoor Air Concentration	1.1	Output	NA	NA	NA	NA	NA	NA	NA
Trichloroethene									
Soil-Gas Concentration	22	Input	NA	NA	NA	59	140	440	NA
Model Predicted Indoor Air Concentration	2.2	Output	NA	NA	NA	0.167	0.23	1.34	NA
Tetrachloroethene									
Soil-Gas Concentration	81	Input	NA	230	NA	NA	120	NA	480
Model Predicted Indoor Air Concentration	8.1	Output	NA	0.643	NA	NA	0.188	NA	1.34
1,3-Butadiene									
Soil-Gas Concentration	0.87	Input	3.5	7.5	12	8.2	12	2.4	40
Model Predicted Indoor Air Concentration	0.087	Output	0.0109	0.0234	0.0305	0.0256	0.0299	0.00769	0.125
Dibromochloromethane									
Soil-Gas Concentration	10	Input	NA	NA	NA	20	NA	25	NA
Model Predicted Indoor Air Concentration	1	Output	NA	NA	NA	0.0401	NA	0.0501	NA

NOTES:

The USEPA screening level for soil gas is the Target Shallow Soil-Gas concentration for risk = 10^{-5} (risk = 10^{-4} for trichloroethene) with a soil attenuation factor of 0.1.

The USEPA screening level for indoor air is the Target Indoor Air concentration for risk = 10^{-5} (risk = 10^{-4} for trichloroethene).

= concentration exceeds the corresponding screening level.

All Concentrations are shown in ug/m^3.

* Depth is based on an assumption that the sample depth interval is 7 feet.

NA - Not applicable, soil-gas concentration below respective USEPA screening value.

† Modeling conservatively assumed buildings had full basements though not necessarily true for all buildings.

Table K.2
Response To USEPA Comments
J&E Results Using Default Air Filled Porosity for Sandy Loam
Southeast Property Boundary

	USEPA Screening Levels	Sample ID	SESB01	SESB02A	SESB02B	SESB03	SESB08A	(7/15/2004) SESB10A	(12/16/2003) SESB10A	SESB10B	SESB11A	SESB11B
		Sample Depth Interval (ft)	5-10	6-7	10-11	5-10	5-6	6-8	6-8	10-14	6-9	10-15
		(ft)	1	0.5*	4	1	0.5*	0.5	0.5	5.5	1	6
Depth below grade to enclosed space floor †		cm	200									
Soil gas sampling depth below grade		cm	228.6	213.36	320.04	228.6	213.36	213.36	213.36	365.76	228.6	381
Average soil temperature		°C	11.1									
Vadose zone soil vapor permeability		cm^2	1.21E-10									
Vadose zone soil dry bulk density		g/cm^3	1.7029									
Vadose zone soil total porosity		unitless	0.377562									
Vadose zone soil water-filled porosity		unitless	0.093562									
Vadose zone DEFAULT air-filled porosity		**unitless**	**0.284**									
Average vapor flow rate into building		cm^3/sec	83.3									
Chloroform												
Soil-Gas Concentration	11	Input	NA	NA	NA	47	NA	NA	NA	NA	NA	NA
Model Predicted Indoor Air Concentration	1.1	Output	NA	NA	NA	0.138	NA	NA	NA	NA	NA	NA
Trichloroethene												
Soil-Gas Concentration	22	Input	NA	64	70	150	NA	NA	32	NA	NA	59
Model Predicted Indoor Air Concentration	2.2	Output	NA	0.195	0.138	0.425	NA	NA	0.0977	NA	NA	0.0967
Tetrachloroethene												
Soil-Gas Concentration	81	Input	NA	810	630	1500	220	260	1500	NA	250	1200
Model Predicted Indoor Air Concentration	8.1	Output	NA	2.46	1.2	4.19	0.667	0.784	4.55	NA	0.699	1.88
1,3-Butadiene												
Soil-Gas Concentration	0.87	Input	10	10	10	4.6	6.9	19	18	8.4	27	24
Model Predicted Indoor Air Concentration	0.087	Output	0.0312	0.0320	0.0271	0.0144	0.0221	0.0609	0.0577	0.0213	0.0843	0.0597

NOTES:

The USEPA screening level for soil gas is the Target Shallow Soil-gas concentration for risk = $1C^{-5}$ (risk = 10^{-4} for trichloroethene) with a soil attenuation factor of 0.1

The USEPA screening level for indoor air is the Target Indoor Air concentration for risk = $1C^{-5}$ (risk = 10^{-4} for trichloroethene).

= concentration exceeds the corresponding screening level.

All Concentrations are shown in ug/m^3.

* Depth is based on an assumption that the sample depth interval is 7 feet.

NA - Not applicable, soil-gas concentration below respective USEPA screening value

† Modeling conservatively assumed buildings had full basements though not necessarily true for all buildings

Table K.3
Response to USEPA Comments
J&E Results Using Default Air Filled Porosity for Sandy Loam
On-Site Buildings

	Screening Levels		Sample ID	B01SB01A	B01SB01B	B08SB02	B13SB01	B45SB01A
	Residential	Non-Residential (derived)	Sample Depth Interval (ft)	5-10	10-15	12-15	10-15	10-15
			Depth Below Foundation (ft)	1	6	7	6	6
Depth below grade to enclosed space floor †			cm	200				
Soil gas sampling depth below grade			cm	228.6	381	411.48	381	381
Average soil temperature			°C	11.1				
Vadose zone soil vapor permeability			cm^2	1.34E-12	1.34E-12	7.07E-11	9.87E-12	9.87E-12
Vadose zone soil dry bulk density			g/cm^3	1.504	1.504	1.351	1.427	1.427
Vadose zone soil total porosity			unitless	0.429	0.429	0.523	0.476	0.476
Vadose zone soil water-filled porosity			unitless	0.145	0.145	0.239	0.192	0.192
Vadose zone soil DEFAULT air-filled porosity				**0.284**				
Soil-building pressure differential			$g/cm\text{-}s^2$	40				
Enclosed space floor length			cm	1517	1517			
Enclosed space floor width			cm	13009	13009	1725	1483	1983
Indoor air exchange rate.			cm^3/sec	1.69E-04				
Chloroform								
Soil-Gas Concentration	11	18	Input	15	NA	NA	NA	NA
Model Predicted Indoor Air Concentration	1.1	1.8	Output	0.00247	NA	NA	NA	NA
Trichloroethene								
Soil-Gas Concentration	22	37	Input	210	43	2300	NA	NA
Model Predicted Indoor Air Concentration	2.2	3.7	Output	0.0344	0.00655	0.538	NA	NA
Tetrachloroethene								
Soil-Gas Concentration	81	136	Input	440	NA	120	NA	NA
Model Predicted Indoor Air Concentration	8.1	13.6	Output	0.072	NA	0.0275	NA	NA
1,3-Butadiene								
Soil-Gas Concentration	0.87	1.5	Input	3.1	4.9	NA	4.2	3.3
Model Predicted Indoor Air Concentration	0.087	0.15	Output	0.000513	0.000791	NA	0.00176	0.000509
cis-1,2 Dichlroethene								
Soil-Gas Concentration	350	350	Input	NA	NA	515	NA	NA
Model Predicted Indoor Air Concentration	35	35	Output	NA	NA	0.119	NA	NA

NOTES:

The residential screening level for soil gas is the Target Shallow Soil-gas concentration for risk = 10^{-5} (risk = 10^{-4} for trichloroethene) with a soil attenuation factor of 0.1.

The residential screening levels for indoor air is the Target Indoor Air concentration for risk = 10^{-5} (risk = 10^{-4} for trichloroethene).

The non-residential screening level for soil gas was derived using PA default non-residential exposure assumptions for risk = 10^{-5} (risk = 10^{-4} for trichloroethene) with a soil attenuation factor of 0.1.

The non-residential screening level for indoor air was derived using PA default non-residential exposure assumptions for risk = 10^{-5} (risk = 10^{-4} for trichloroethene).

= Concentration exceeds the corresponding residential screening level.

= Concentration exceeds the corresponding non-residential screening level.

All Concentrations are shown in ug/m^3.

NA - Not applicable, soil-gas concentration below respective USEPA screening value.

† Modeling conservatively assumed buildings had full basements though not necessarily true for all buildings.

Table K.4A
Re-evaluation of Soil-Gas Analytical Results for TCE Based On Risk = 1 x 10^{-5}
Soil Vapor Pathway Assessment
Harley-Davidson Motor Company Operations, Inc., York PA
Northeast Property Boundary

	Soil-GasScreening Criteria													
	USEPA Target Shallow Soil-Gas Risk=1x10-5	USEPA Target Shallow Soil-Gas Risk=1x10-4	NESB00 8/3/2004 581311 0.5 5'-10' ug/m^3		NESB01 7/12/2004 578969 1 5'-10' ug/m^3		NESB06 7/12/2004 578971 0.5 5'-8' ug/m^3		NESB10A 7/12/2004 578972 0.5 5'-10' ug/m^3		NESB10B 7/12/2004 578973 0.5 10'-14' ug/m^3		NESB-13A 7/15/2004 579720 1 5'-10' ug/m^3		NESB-13B 7/15/2004 579719 1 10'-15' ug/m^3	
Volatile Organic Compounds (TO-14/15)			conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier
Trichloroethene	2.2	22	7.5		19		2.7	j	18	j	16		59		140	

Notes:

Value exceeds EPA Target Shallow Soil-Gas Concentration (Risk = 1 x 10^{-5})

Value exceeds EPA Target Shallow Soil-Gas Concentration (Risk = 1 x 10^{-4})

D Sample result is from a higher dilution run

U Parameter Not Detected

Dup Duplicate sample (shown to the right of their corresponding samples)

j the result is a quantitative estimate as determined by the data validator

Table K.4A
Re-evaluation of Soil-Gas Analytical Results for TCE Based On Risk = 1 x 10^{-5}
Soil Vapor Pathway Assessment
Harley-Davidson Motor Company Operations, Inc., York PA
Northeast Property Boundary

	Soil-GasScreening Criteria													
	USEPA Target Shallow Soil-Gas Risk=1x10-5	USEPA Target Shallow Soil-Gas Risk=1x10-4	NESB-15 7/15/2004 579722 0.5 5'-7' ug/m^3		DUP001 7/15/2004 579723 1 5'-7' ug/m^3		NESB-18 7/15/2004 579724 1 5'-10' ug/m^3		FB001 7/12/2004 578970 0.5 NA ug/m^3		FB002 7/15/2004 579721 0.5 NA ug/m^3		FB004 08/03/2004 581310 0.5 NA ug/m^3	
Volatile Organic Compounds (TO-14/15)			conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier
Trichloroethene	2.2	22	280	D	440	D	13		1.3	U	1.3	U	1.3	U

Notes:

Value exceeds EPA Target Shallow Soil-Gas Concentration (Risk = 1 x 10^{-5})

Value exceeds EPA Target Shallow Soil-Gas Concentration (Risk = 1 x 10^{-4})

D Sample result is from a higher dilution run

U Parameter Not Detected

Dup Duplicate sample (shown to the right of their corresponding samples)

j the result is a quantitative estimate as determined by the data validator

TABLE K.4B
Re-evaluation of Soil-Gas Analytical Results for TCE Based On Risk = 1 x 10^{-5}
Soil Vapor Pathway Assessment
Harley-Davidson Motor Company Operations, Inc., York, PA
Southeast Property Boundary

	Soil-GasScreening Criteria																			
	USEPA Target Shallow Soil-Gas Risk=1x10-5	USEPA Target Shallow Soil-Gas Risk=1x10-4	SESB01 7/16/2004 579734 1 5'-10' ug/m^3		SESB02A 12/16/2003 556612 4 6'-7' ug/m^3		SESB02B 12/16/2003 556614 4 10'-11' ug/m^3		Dup 001 12/16/2003 556613 4 10'-11' ug/m^3		SESB03 7/16/2004 579731 4 5'-10' ug/m^3		DUP002 7/16/2004 579732 3 5'-10' ug/m^3		SESB08A 7/16/2004 579730 0.5 5'-6' ug/m^3		SESB09A 7/15/2004 579729 0.5 10'-15' ug/m^3		SESB-10A* 7/15/2004 579727 1 6'-8' ug/m^3		SESB10A 12/16/2003 556615 4 6'-8' ug/m^3	
Volatile Organic Compounds (TO-14/15)			conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier
Trichloroethene	2.2	22	10		64		70		64		150		86		2.2		1.3	U	19		32	

Notes:

Value exceeds EPA Target Shallow Soil-Gas Concentration (Risk = 1 x 10^{-5})

Value exceeds EPA Target Shallow Soil-Gas Concentration (Risk = 1 x 10^{-4})

U Parameter Not Detected

Dup Duplicate sample (shown to the right of their corresponding samples)

j the result is a quantitative estimate as determined by the data validator

* TCE at SESB10A has already been assessed at a high soil gas concentration during the previous sampling round

TABLE K.4B
Re-evaluation of Soil-Gas Analytical Results for TCE Based On Risk = 1 x 10^{-5}
Soil Vapor Pathway Assessment
Harley-Davidson Motor Company Operations, Inc., York, PA
Southeast Property Boundary

	Soil-GasScreening Criteria		SESB-10B 7/15/2004 579728 0.5 10'-14' ug/m^3		SESB-11A 7/15/2004 579726 1 6'-9' ug/m^3		SESB-11B 7/15/2004 579725 5 10'-15' ug/m^3		FB001 12/16/2003 556611 0.5 NA ug/m^3		FB002 7/15/2004 579721 0.5 NA ug/m^3		FB003 7/16/2004 579733 0.5 NA ug/m^3		FB002 7/15/2004 579721 0.5 NA ug/m^3		FB004 08/03/2004 581310 0.5 NA ug/m^3	
Volatile Organic Compounds (TO-14/15)	USEPA Target Shallow Soil-Gas Risk=1x10-5	USEPA Target Shallow Soil-Gas Risk=1x10-4	conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier
Trichloroethene	2.2	22	1.3		18		59		1.3	U	1.3	U	1.3	U	1.3	U	1.3	U

Notes:

Value exceeds EPA Target Shallow Soil-Gas Concentration (Risk = 1 x 10^{-5})

Value exceeds EPA Target Shallow Soil-Gas Concentration (Risk = 1 x 10^{-4})

U Parameter Not Detected

Dup Duplicate sample (shown to the right of their corresponding samples)

j the result is a quantitative estimate as determined by the data validator

* TCE at SESB10A has already been assessed at a high soil gas concentration d

TABLE K.4C
Re-Evaluation of Soil-Gas Analytical Results for TCE Based On Risk = 1 x 10^{-5}
Soil Vapor Pathway Assessment
Harley-Davidson Motor Company Operations, Inc., York, PA
On-Site Buildings

	Soil-GasScreening Criteria		B01SB01A 8/3/2004 581306 2 5'-10' ug/m^3		B01SB01B 8/3/2004 581307 1 10'-15' ug/m^3		B07SB01 8/3/2004 581308 0.5 5'-10' ug/m^3		B08SB02 7/16/2004 579735 5 12'-15' ug/m^3		B13SB01 12/19/2003 556620 0.5 10'-15' ug/m^3		B45SB01A 12/19/2003 556616 0.5 10'-15' ug/m^3	
Volatile Organic Compounds (TO-14/15)	Derived from PA Specific Non-Residential Exposure Assumptions Risk-1x10-5	Derived from PA Specific Non-Residential Exposure Assumptions Risk-1x10-4	conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier
Trichloroethene	3.7	37	210		43		3.4		2300	D	1.3	U	2	

Notes:

Value Exceeds non-residential soil-gas concentration derived using PA default non-residential exposure assumptions, Risk=1x10-5

Value Exceeds non-residential soil-gas concentration derived using PA default non-residential exposure assumptions, Risk=1x10-4

D Sample result is from a higher dilution run

U Parameter Not Detected

Dup Duplicate sample (shown to the right of their corresponding samples)

j the result is a quantitative estimate as determined by the data validator

TABLE K.4C
Re-Evaluation of Soil-Gas Analytical Results for TCE Based On Risk = 1 x 10^{-5}
Soil Vapor Pathway Assessment
Harley-Davidson Motor Company Operations, Inc., York, PA
On-Site Buildings

	Soil-GasScreening Criteria									
	Derived from PA Specific Non-Residential Exposure Assumptions Risk-1x10-5	Derived from PA Specific Non-Residential Exposure Assumptions Risk-1x10-4	Dup 002 12/19/2003 556617 0.5 10'-15' ug/m^3		FB003 7/16/2004 579733 0.5 NA ug/m^3		FB004 08/03/2004 581310 0.5 NA ug/m^3		FB002 12/19/2003 556618 0.5 NA ug/m^3	
Volatile Organic Compounds (TO-14/15)			conc.	qualifier	conc.	qualifier	conc.	qualifier	conc.	qualifier
Trichloroethene	3.7	37	3.1		1.3	U	1.3	U	1.3	U

Notes:

Value Exceeds non-residential soil-gas concentration derived using PA default non-residential exposure assumptions, Risk=1x10-5

Value Exceeds non-residential soil-gas concentration derived using PA default non-residential exposure assumptions, Risk=1x10-4

D Sample result is from a higher dilution run

U Parameter Not Detected

Dup Duplicate sample (shown to the right of their corresponding samples)

j the result is a quantitative estimate as determined by the data validator

Table K.5
Vapor Intrusion Input Parameters and Predicted Indoor Air Results for TCE based on Risk = 1 x 10^{-5}
Soil Vapor Pathway Assessment
Harley-Davidson Motor Company Operations, Inc.
York, Pennsylvania
Northeast Property Boundary

	USEPA Screening Levels	Sample ID Sample Depth Interval (ft) Depth Below Foundation (ft)	NESB00 5-10 1	NESB01 5-10 1	NESB06 5-8 0.5*	NESB10A 5-10 0.5*	NESB10B 10-14 0.5*	NESB13A 5-10 1	NESB13B 10-15 6	NESB15 5-7 0.5*	NESB18 5-10 1
Depth below grade to enclosed space floor †		cm	200								
Soil gas sampling depth below grade		cm	228.6	228.6	228.6	228.6	228.6	228.6	381	213.36	228.6
Average soil temperature		°C	11.1								
Vadose zone soil vapor permeability		cm^2	1.21E-10								
Vadose zone soil dry bulk density		g/cm^3	1.7029								
Vadose zone soil total porosity		unitless	0.377562								
Vadose zone soil water-filled porosity		unitless	0.250589								
Average vapor flow rate into building		cm^3/sec	83.3								
Trichloroethene											
Soil-Gas Concentration	2.2	Input	7.5	19	2.7	18	16	59	140	440	13
Model Predicted Indoor Air Concentration	0.22	Output	0.00746	0.0189	0.00269	0.0179	0.00367	0.0587	0.0296	0.696	0.0129

NOTES:

The USEPA screening level for soil gas is the Target Shallow Soil-gas concentration for risk = 10^{-5} with a soil attenuation factor of 0.1.

The USEPA screening levels for indoor air is the Target Indoor Air concentration for risk = 10^{-5}

= concentration exceeds the corresponding screening level.

All Concentrations are shown in ug/m^3.

* Depth is based on an assumption that the sample depth interval is 7 feet.

NA - Not applicable, soil-gas concentration below respective USEPA screening value.

† Modeling conservatively assumed buildings had full basements though not necessarily true for all buildings.

Table K.6
Vapor Intrusion Input Parameters and Predicted Indoor Air Results for TCE based on Risk = 1 x 10^{-5}
Soil Vapor Pathway Assessment
Harley-Davidson Motor Company Operations, Inc.
York, Pennsylvania
Southeast Property Boundary

	USEPA Screening Levels	Sample ID	SESB01	SESB02A	SESB02B	SESB03	SESB08A	(12/16/2003) SESB10A	SESB11A	SESB11B
		Sample Depth Interval (ft)	5-10	6-7	10-11	5-10	5-6	6-8	6-9	10-15
		(ft)	1	0.5*	4	1	0.5*	0.5	1	6
Depth below grade to enclosed space floor †		cm	200							
Soil gas sampling depth below grade		cm	228.6	213.36	320.04	228.6	213.36	213.36	228.6	381
Average soil temperature		°C	11.1							
Vadose zone soil vapor permeability		cm^2	1.21E-10							
Vadose zone soil dry bulk density		g/cm^3	1.7029							
Vadose zone soil total porosity		unitless	0.377562							
Vadose zone soil water-filled porosity		unitless	0.250589							
Average vapor flow rate into building		cm^3/sec	83.3							
Trichloroethene										
Soil-Gas Concentration	2.2	Input	10	64	70	150	2.2	32	18	59
Model Predicted Indoor Air Concentration	0.22	Output	0.00444	0.101	0.0216	0.149	0.00181	0.0506	0.0179	0.0125

NOTES:

The USEPA screening level for soil gas is the Target Shallow Soil-gas concentration for risk = 10^{-5} with a soil attenuation factor of 0.1.

The USEPA screening levels for indoor air is the Target Indoor Air concentration for risk = $10^{-5.}$

= concentration exceeds the corresponding screening level.

All Concentrations are shown in ug/m^3.

* Depth is based on an assumption that the sample depth interval is 7 feet.

NA - Not applicable, soil-gas concentration below respective USEPA screening value.

† Modeling conservatively assumed buildings had full basements though not necessarily true for all buildings.

Table K.7
Response to USEPA Comments
Vapor Intrusion Model Input Parameters and Predicted Indoor Air Results for TCE based on Risk = 1 x 10^{-5}
Soil Vapor Pathway Assessment
Harley-Davidson Motor Company Operations, Inc.
York, Pennsylvania
On-Site Buildings

	Non-Residential (derived)	Sample ID	B01SB01A	B01SB01B	B08SB02
		Sample Depth Interval (ft)	5-10	10-15	12-15
		Depth Below Foundation (ft)	1	6	7
Depth below grade to enclosed space floor †		cm	200		
Soil gas sampling depth below grade		cm	228.6	381	411.48
Average soil temperature		°C	11.1		
Vadose zone soil vapor permeability		cm^2	1.34E-12	1.34E-12	7.07E-11
Vadose zone soil dry bulk density		g/cm^3	1.504	1.504	1.351
Vadose zone soil total porosity		unitless	0.429	0.429	0.523
Vadose zone soil water-filled porosity		unitless	0.336	0.336	0.323
Soil-building pressure differential		$g/cm\text{-}s^2$	40		
Enclosed space floor length		cm	1517	1517	16091
Enclosed space floor width		cm	13009	13009	1725
Indoor air exchange rate.		cm^3/sec	1.69E-04		
Trichloroethene					
Soil-Gas Concentration	3.7	Input	210	43	2300
Model Predicted Indoor Air Concentration	0.37	Output	0.0159	0.00318	0.201

NOTES:

The non-residential screening level for soil gas was derived using PA default non-residential exposure assumptions for risk = 10^{-5} with a soil atten. factor of 0.1.

The non-residential screening level for indoor air was derived using PA default non-residential exposure assumptions for risk = 10^{-5}

= Concentration exceeds the corresponding screening level.

All Concentrations are shown in ug/m^3.

NA - Not applicable, soil-gas concentration below respective USEPA screening value.

† Modeling conservatively assumed buildings had full basements though not necessarily true for all buildings.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

December 2, 2005

Sharon R. Fisher
Harley Davidson Motor Company Operations Inc.
1425 Eden Road
York, Pennsylvania 17402

Subject: RCRA Corrective Action

Dear Ms. Fisher,

Please find below our comments on your "Response to USEPA's Comments on the Indoor Vapor Pathway Screening Assessment, Supplemental RI Report" as prepared by Langan and dated July 18, 2005.

2.0 BACKGROUND AND PRELIMINARY SCREENING ASSESSMENT

The draft Assessment found that "...key facts and/or assumptions..." included "...the depth to groundwater beneath these areas of investigation is generally 20 to 35 feet below ground surface." In response, we commented that 1) "...the depth to groundwater in MW-118S and MW-18D has been measured at 8.1' and 5.7 bgs..." and that "...based on the location of these monitoring wells, depth to groundwater under certain residences next to the NPBA may be less than 20'..." and that 2) "...while depth to groundwater in monitoring well MW-64S in the SPBA has been measured at 30', downgradient residences within 200' are 20' to 30' lower in elevation, suggesting that depth to groundwater under these residences may be less than 30'...".

You appear to acknowledge that our comments are valid, but then note that "...the conceptual approach to the site includes the conservative assumption that the off-site residential buildings are situated directly over the perimeter soil-vapor sample locations which are expected to be conservative concentrations because the source concentrations in the on-site groundwater are expected to be higher than groundwater concentrations beneath offisite properties."

This statement suggests that VOC concentration in indoor air is primarily a function of the VOC concentration in groundwater. However, as you are aware, per the J&E model, the VOC concentration in indoor air is also a function of other variables. Two of these variables are the depth below grade to the water table and the thickness of the soil stratum. Per our comments, the values for these variables at certain offsite residences are less than those for the facility boundary.

Regarding the thickness of soil stratum, per our comments of October 7, 2005, on the Draft Field

Sampling Plan for Supplemental Field Investigations, the J&E model should not be applied where there is no soil stratum between the building foundation and groundwater. In this case, we requested that residences in the north property boundary area (NPBA) be inventoried to confirm that all have native soil between the foundation and groundwater.

However, even where there is soil between the foundation and groundwater, based on available information, it is still unclear whether the soil stratum thickness and/or depth to groundwater at the location of the offisite residences will provide for adequate VOC attenuation between the contaminant source (i.e., groundwater) and indoor air. To confirm that existing conditions under the residences provide for the necessary VOC attenuation, J&E modeling should be performed assuming groundwater is the source and the "worst case" soil stratum thickness and depth to groundwater values for offsite residences to predict indoor air concentrations at these offsite locations.

While soils at the facility boundary have been tested for water-filled soil porosity, soils under residences have not been tested for this parameter. Since a building reduces the infiltration of precipitation to underlying soils, the water-filled soil porosity of soils under the residences is likely to be lower than the site-specific levels obtained through testing of soils at the facility boundary. In lieu of site-specific water-filled soil porosity data for soils under the residences, the modeling should include the assumption that water-filled soil porosity is the EPA default value of 0.103.

2.2 Tier I Screening Assessment

Your response indicates that "...the 10-5 risk level is cited in the USEPA Draft Vapor Intrusion Guidance (November 2002) as appropriate for evaluating Environmental Indicators...". We are not aware that the guidance cites a 10-5 risk as "...appropriate for evaluating Environmental Indicators." Rather, the subject guidance simply provides target incremental carcinogenic risk levels ranging from 10-4 to 10-6.

3.1 Soil Vapor Qualitative Field Analysis - Membrane Interface Probe

Table 1A - NPBA

In response to our comment that no summa samples were collected at the two MIP locations in the NPBA with the highest TCE area counts, you note that "...no samples were collected at depths above 5 feet below ground surface (bgs) because of potential for atmospheric interference that could result in erroneous or ambiguous results." However, we did not suggest that samples be collected at 0-5' bgs at these locations. Rather, we suggested that the subject MIP results may generally be indicative of higher VOC levels in subsurface soil gas than other sampled locations. In this case, J&E modeling should be performed to confirm that vapor intrusion does not present a threat to the residences in the area of these locations.

Table 1C - On-Site Buildings

In response to our comment that no EPA Method TO15 samples were collected at Building 11,

the location of the highest TCE area count (by almost an order of magntitude), you note that "...soil moisture levels (apparently high groundwater levels) near Building 11 resulted in the inablity to obtain the soil vapor samples attempted at depths of 5-10' bgs and 10'-15' bgs..." and suggest that any future attempts to collect a TO15 sample in the vicinity of Building 11 would also be unsuccessful. However, based on available groundwater data, the subject soil moisture is likely due "perched" water rather than groundwater. In any case, J&E modeling should be performed to confirm that vapor intrusion does not present a threat to occupants of Building 11.

3.2 Focused Soil Vapor Quantitative Analysis - Summa Canister Sampling

In response to our comment that the pore water saturation results may not be representative, it is indicated that "...the physical soil properties were determined using soil samples collected in the drier months....which adds to the degree of conservatism in the site-specific analysis ". On other hand, relatively wet conditions may also occur in July and August, e.g., after a substantial rain event. In this case, the site-specific pore water saturation data and, as a result, the site-specific analysis may not necessarily be "conservative".

The comments above should be considered when finalizing the Indoor Vapor Pathway Screening Assessment, Supplemental RI Report. We recommend the requested additional modeling be completed before finalizing the Field Sampling Plan for Supplemental Field Investigations in case the model results suggest that additional field investigations are needed to complete the assessment. To ensure agreement on the scope of the modeling, e.g., the soil thickness and depth to water tables values to be assessed, please submit a brief draft modeling "work plan" for our review and comment.

Please let me know if you have any questions or comments regarding the above.

Sincerely,

Darius Ostrauskas
Project Manager

cc: Pamela Trowbridge, PADEP

LANGAN
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Richard R. Steiner, P.E.

27 March 2006

Mr. Darius Ostrauskas
Project Manager
U.S. EPA, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Re: Response to USEPA's December 2, 2005 Comments on the Indoor Vapor Pathway Screening Assessment, Supplemental RI Report Harley-Davidson Motor Company, Operations, Inc., York, PA Facility Langan Project No. 1406706

Dear Mr. Ostrauskas:

Harley-Davidson Motor Company Operations, Inc. (Harley-Davidson) has reviewed the Environmental Protection Agency's (EPA's) second set of comments concerning the Indoor Vapor Pathway Screening Assessment Supplemental RI Report originally submitted by Harley-Davidson on March 11, 2005. EPA'S second set of comments dated December 2, 2005 is in response to Harley-Davidson's July 18, 2005 response to EPA's initial comments dated April 18, 2005. In their most recent comments, EPA expressed that actual conditions (specifically, depth below grade to the water table and the thickness of the soil stratum beneath nearby off-site structures) may differ from the conditions assumed in the soil vapor modeling that was performed for the Harley-Davidson property using the Johnson & Ettinger (J&E) model.

EPA declared in September 2005 that the Human Health Environmental Indicators for the property have been satisfied. EPA is now requesting that further vapor intrusion analysis be completed using the J&E model to verify the effect of certain "worst case" assumptions about soil thicknesses and depths to groundwater that could exist beneath off-site structures. Harley-Davidson has prepared this response to both individually respond to EPA's comments and provide a "workplan", as EPA requested, for further soil vapor modeling to assess the model sensitivity to these parameters.

For convenience, the specific EPA comments are reiterated below and followed by Harley-Davidson's responses in bold italic text.

EPA COMMENT

2.0 BACKGROUND AND PRELIMINARY SCREENING ASSESSMENT

The draft Assessment found that "...key facts and/or assumptions..." included "...the depth to groundwater beneath these areas of investigation is generally 20 to 35 feet below ground surface." In response, we commented that 1) "...the depth to groundwater in MW-118S and MW-18D has been measured at 8.1' and 5.7 bgs..." and that "...based on the location of these monitoring wells, depth to groundwater under certain residences next to the NPBA may be less than 20'..." and that 2) "...while depth to groundwater in monitoring well MW-64S in the SPBA has been measured at 30', downgradient residences within 200' are 20' to 30' lower in elevation, suggesting that depth to groundwater under these residences may be less than 30'...".

You appear to acknowledge that our comments are valid, but then note that "...the conceptual approach to the site includes the conservative assumption that the off-site residential buildings are situated directly over the perimeter soil-vapor sample locations which are expected to be conservative concentrations because the source concentrations in the on-site groundwater are expected to be higher than groundwater concentrations beneath off-site properties."

This statement suggests that VOC concentration in indoor air is primarily a function of the VOC concentration in groundwater. However, as you are aware, per the J&E model, the VOC concentration in indoor air is also a function of other variables. Two of these variables are the depth below grade to the water table and the thickness of the soil stratum. Per our comments, the values for these variables at certain offsite residences are less than those for the facility boundary.

Regarding the thickness of soil stratum, per our comments of October 7, 2005, on the Draft Field Sampling Plan for Supplemental Field Investigations, the J&E model should not be applied where there is no soil stratum between the building foundation and groundwater. In this case, we requested that residences in the north property boundary area (NPBA) be inventoried to confirm that all have native soil between the foundation and groundwater.

However, even where there is soil between the foundation and groundwater, based on available information, it is still unclear whether the soil stratum thickness and/or depth to groundwater at the location of the off-site residences will provide for adequate VOC attenuation between the contaminant source (i.e., groundwater) and indoor air. To confirm that existing conditions under the residences provide for the necessary VOC attenuation, J&E modeling should be performed assuming groundwater is the source and the "worst case" soil stratum thickness and depth to groundwater values for offsite residences to predict indoor air concentrations at these offsite locations.

While soils at the facility boundary have been tested for water-filled soil porosity, soils under residences have not been tested for this parameter. Since a building reduces the infiltration of precipitation to underlying soils, the water-filled soil porosity of soils under the residences is likely to be lower than the site-specific levels obtained through testing of soils at the facility boundary. In lieu of site-specific water-filled soil porosity data for soils under the residences, the

modeling should include the assumption that water-filled soil porosity is the EPA default value of 0.103.

RESPONSE

Based on our experience and application of the J&E vapor model, the predicted indoor air results are most sensitive to the source concentration input to the model (whether the source is soil vapor or groundwater VOC concentrations). We acknowledge that results using the J&E model are also a function of but generally less sensitive to other variables, including but not limited to the depth to groundwater below grade and the thickness of the soil stratum above the source. To further assess EPA's expressed uncertainty about the physical conditions beneath off-site buildings, Harley-Davidson proposes to perform additional analysis using the J&E model to evaluate its sensitivity to the above variables and water-filled porosity input to the model.

The additional vapor model analyses will assume groundwater is the vapor source and use the minimum "worst case" soil stratum thickness (and depth to groundwater source) that can be accommodated in the J&E model. The following input values and rationales are proposed to further evaluate the predicted indoor air concentrations under these "worst case" conditions:

- ***Off-site Vapor Source Concentration in Groundwater – will be derived using the maximum concentrations for specific VOCs detected in off-site groundwater samples collected over the past 5 years (1999-2004) by Harley-Davidson (i.e. RW-2, RW-4, S-6, and S-7).***

- ***Depth to Groundwater/Soil Thickness Below Building Foundation – will be minimized to be equivalent to the thickness of the capillary fringe, 25 cm (about 9.8 inches) which is determined by the model based on the specified soil type (e.g. sandy loam). Given the default basement depth of 200 cm (about 6.6 ft), the depth to groundwater will be input as a depth of 225 cm (about 7.4 ft), leaving only a nominal 25 cm of soil for attenuation between the foundation and source. The thickness of the capillary fringe for the given soil type is the minimum soil thickness allowed by the J&E model.***

- ***Water-filled Soil Porosity - The EPA-default water-filled soil porosity for a sandy loam soil will be used, as suggested.***

EPA COMMENT

2.2 Tier I Screening Assessment

Your response indicates that "...the 10^{-5} risk level is cited in the USEPA Draft Vapor Intrusion Guidance (November 2002) as appropriate for evaluating Environmental Indicators...". We are not aware that the guidance cites a 10^{-5} risk as "...appropriate for evaluating Environmental Indicators." Rather, the subject guidance simply provides target incremental carcinogenic risk levels ranging from 10^{-4} to 10^{-6}.

RESPONSE

Page 9 of the USEPA Vapor Intrusion Guidance states the following, "For the purposes of making Current Human Exposures Under Control EI determinations with respect to vapor intrusion under RCRA and CERCLA, USEPA generally recommends to use the 10-5 values."

EPA COMMENT

3.1 Soil Vapor Qualitative Field Analysis - Membrane Interface Probe

Table 1A - NPBA

In response to our comment that no summa samples were collected at the two MIP locations in the NPBA with the highest TCE area counts, you note that "...no samples were collected at depths above 5 feet below ground surface (bgs) because of potential for atmospheric interference that could result in erroneous or ambiguous results." However, we did not suggest that samples be collected at 0-5' bgs at these locations. Rather, we suggested that the subject MIP results may generally be indicative of higher VOC levels in subsurface soil gas than other sampled locations. In this case, J&E modeling should be performed to confirm that vapor intrusion does not present a threat to the residences in the area of these locations.

RESPONSE

As acknowledged, representative soil gas samples could not be obtained at two MIP locations in the NPBA. However, all other soil gas samples that were obtained in the NPBA and elsewhere across the entire property were incorporated in the J&E model and vapor pathway screening assessment and those results demonstrate that the predicted indoor air concentrations associated with the Harley-Davidson property conditions do not exceed the applicable screening risk criteria. Those results were considered by EPA when it was declared in September 2005 that the Human Health Environmental Indicators, which includes the vapor pathway, are satisfied for the site. For additional re-assurance in the few instances where soil vapor samples could not be obtained at the NPBA, the potential vapor intrusion pathway will be further assessed assuming a source in off-site groundwater and following the proposed modeling approach described in previous responses above.

EPA COMMENT

Table 1C - On-Site Buildings

In response to our comment that no EPA Method TO15 samples were collected at Building 11, the location of the highest TCE area count (by almost an order of magnitude), you note that "...soil moisture levels (apparently high groundwater levels) near Building 11 resulted in the inability to obtain the soil vapor samples attempted at depths of 5-10' bgs and 10'-15' bgs..." and suggest that any future attempts to collect a TO15 sample in the vicinity of Building 11 would

also be unsuccessful. However, based on available groundwater data, the subject soil moisture is likely due "perched" water rather than groundwater. In any case, J&E modeling should be performed to confirm that vapor intrusion does not present a threat to occupants of Building 11.

RESPONSE

At Building 11, in spite of Langan's best efforts, soil vapor samples were not able to be successfully obtained. In lieu of soil vapor samples, we will use the J&E model assuming a vapor source in groundwater to predict indoor air concentrations at Building 11. Using conservative depth to groundwater measurements in nearby wells and the highest VOC concentrations detected in groundwater samples from these nearby wells as inputs to the model, we will further assess the potential vapor intrusion associated with Building 11. The following model input values and rationales are proposed:

- ***Vapor Source Concentration in Groundwater – will be derived using the maximum concentrations for specific VOCs detected in groundwater samples collected from nearby monitoring wells (e.g. MW-31S, MW-77, and MW-83 in Table 33, of the Draft Interim Site-wide RI Report, July 2002)***.

- ***Depth to Groundwater/Soil Thickness Below Building Foundation – will be determined based on the shallowest measured depth to groundwater in nearby monitoring wells (e.g. MW-31S, MW-77, and MW-83 in Table 23, of the Draft Interim Site-wide RI Report, July 2002)***.

- ***Water-filled Soil Porosity - The EPA-default water-filled soil porosity for the representative soil type in the area of Building 11 will be used, as suggested.***

- ***Building 11 Specific Indoor Air Exchange Rate – We will consider factoring in the building specific air exchange rate (estimated as 5.4 volume exchanges per hour), if necessary to further assess the potential indoor air concentration risk.***

Following the same approach presented in the vapor pathway assessment report, we will use the advanced version of the J&E model to accommodate the larger building footprint area of Building 11. The model-predicted indoor air concentrations will be compared to the non-residential screening levels derived using Pennsylvania non-residential exposure assumptions.

EPA COMMENT

3.2 Focused Soil Vapor Quantitative Analysis - Summa Canister Sampling

In response to our comment that the pore water saturation results may not be representative, it is indicated that "...the physical soil properties were determined using soil samples collected in the drier months....which adds to the degree of conservatism in the site-specific analysis". On other hand, relatively wet conditions may also occur in July and August, e.g., after a substantial rain event. In this case, the site-specific pore water saturation data and, as a result, the site-specific analysis may not necessarily be "conservative".

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

May 12, 2006

Sharon Fisher
Harley-Davidson Motor Company Operations, Inc.
1425 Eden Road
York, Pennsylvania 17402

Subject: Vapor Intrusion Evaluation

Dear Ms. Fisher,

This letter provides EPA comments on Langan's letter of March 28, 2006, regarding the subject evaluation for Harley-Davidson's facility in York, Pennsylvania. Langan's letter responded to EPA comments of December 2, 2005.

General Comments

Per EPA comments of October 7, 2005, on the Draft Field Sampling Plan for the Supplemental RI , "...residences in the vicinity of collection wells CW-5 and CW-6 should be inventoried to determine the depth of the foundation relative to bedrock." The objective of this inventory is to confirm there are no residences which may be constructed on weathered rock or where the soil thickness is less than the thickness of the capillary fringe for the subject soil. As you indicate, the J&E model cannot be applied in these cases. This inventory should be performed based on the log for collection well CW-6, indicates saprolite was encountered at 5' to 5.5' below ground surface.

As discussed during our meeting on May 4, we request you develop a brief plan for this inventory and provide EPA an opportunity to comment on the plan. One element of the plan should be a survey to determine if any residences of interest have a basement. The subject residences should include, at a minimum, those relatively close to collection well CW-6.

Our comments of October 7, 2005, also noted the log for well MW-65 along the north-south property line in the NPBA indicates weathered bedrock at 5' below ground surface. Available information should be reviewed to determine if weathered bedrock may be at a similar depth below residences close to the property line and between MIP locations NESB00 and NESB08.

2.0 Background and Preliminary Screening Assessment

It is indicated the input groundwater concentration for the modeling "...will be derived using the maximum concentrations for specific VOCs detected in off-site groundwater samples collected over the past five years (1999-2004) by Harley-Davidson (i.e., RW-2, RW-4, S-6 and S-7)." However, the residences which may be at risk from vapor intrusion (e.g., where soil thickness and depth to groundwater are minimal) are located closer to onsite collection wells CW-5 and CW-6 than the referenced offsite wells. In this case, the input groundwater concentrations for modeling should be the maximum detected concentrations for wells CW-5 and CW-6 over the last five years.

The additional vapor model analyses should also be performed for residences downgradient of the South Property Boundary Area. We also request you evaluate available information to determine if any residences at risk may be constructed on weathered rock or where the soil thickness is less than the default capillary fringe thickness. The model input groundwater concentrations should be the maximums detected in well MW-64 over the last five years. Regarding the inputs for soil thickness and depth to groundwater, we suggest you propose these inputs to us after reviewing available information.

2.2 Tier I Screening Assessment

It is indicated that "...we will consider factoring in the building specific air exchange rate (estimated as 5.4 volume exchanges per hour), if necessary to further assess the potential indoor air concentration risk." If utilized, the source of the referenced air exchange rate should be provided. If this rate is based on the HVAC design, the actual rate may vary from the design rate. If it becomes apparent that the model output is sensitive to this parameter, the evaluation should also use the EPA's default air exchange rate input for industrial buildings.

If you any questions regarding these comments, please let me know.

Sincerely,

Darius Ostrauskas
Project Manager

cc: Pam Trowbridge, PADEP
Nicki Fatherly, USACE

ATTACHMENT B

Soil Vapor Sampling Protocol

Using Direct Push Technology and Summa Canisters

Geoprobe Sampling Apparatus

To collect the soil gas samples, a Geoprobe will be used to advance connected 4-foot sections of narrow diameter threaded steel casing down to the sampling depth. Once at depth, the casing will be hydraulically raised several inches in order to release a disposable drive point and open the bottom of the casing. Prior to the collection of the soil vapor samples, the entire sampling system will be purged with ambient air. Polyethylene tubing with a threaded stainless steel tip (PRT adaptor) and "O" ring will be lowered through the casing to the bottom of the hole and threaded into the PRT/expendable point holder to isolate the void space from annular space within the rods.

Summa Canister Sample Collection

The tubing will be connected to the valve on the Summa™ Canister. The 1-lter to 6-liter Summa™ Canister, with a field verified initial vacuum of at least 28 inches of mercury will be filled at a rate not to exceed 0.2 liters per minute (l/m). A lab certified flow controller will be used to control the rate of airflow into the canister. The Summa™ Canister will be placed as close to the borehole as possible and the intake valve will be opened to draw in air by the vacuum in the canister until the pressure gauge indicates there is an adequate sample volume (i.e., 5-inches of mercury remaining [the final pressure will range between 4 to 8 inches of mercury).

The sample probing tools will be decontaminated before and after use at each location. New lengths of polyethylene or Teflon tubing will be used for each sample collected.

ATTACHMENT 2

Laboratory Deliverables (CD)

LANGAN

ATTACHMENT 3

Third Party Data Validation Report

LANGAN

Project: Harley Davidson Soil Vapor Sampling
Laboratory: Severn Trent Laboratories, Inc.
Sample Delivery Group: J70587
Fraction: Organic
Matrix: Air/Soil vapor
Report Date: 12/15/2007

This analytical quality assurance report is based upon a review of analytical data generated for air/soil vapor samples. The sample locations, laboratory identification numbers, sample collection dates, sample matrix, and analyses performed are presented in Table 1.

The samples were analyzed for volatile organic compounds. The sample analyses were performed in accordance with the procedures outlined in EPA Method TO-15.

All sample analyses have undergone an analytical quality assurance review to ensure adherence to the required protocols. Results have been validated or qualified according to general guidance provided in the Region III modifications to "Laboratory Data Validation Functional Guidelines for Validating Organic Analyses", USEPA 9/94. This document specifies procedures for validating data generated for CLP analyses. Therefore, the quality control requirements specified in the methods and associated acceptance criteria were also used to evaluate the non-CLP data. The parameters presented on the following page were evaluated.

X	•	Data Completeness
X	•	Chain of Custody Documentation
X	•	Holding Times
X	•	Instrument Performance
X	•	Initial and Continuing Calibrations
X	•	Laboratory and Field Blank Analysis Results
X	•	Surrogate Compound Recoveries
	•	Matrix Spike/Matrix Spike Duplicate Recoveries and Reproducibility
	•	Field Duplicate Analysis Results
X	•	Laboratory Control Sample Results
X	•	Internal Standard Performance
X	•	Qualitative Identification
X	•	Quantitation/Reporting Limits

X - Denotes parameter evaluated.

It is recommended that the data only be used according to the qualifiers presented, and discussed in this report. All other data should be considered qualitatively and quantitatively valid as reported by the laboratory, based on the items evaluated.

Report Approved By:

Shawnie M. Rodgers
President

12/15/2007
Date

1.0 *DATA COMPLETENESS*

The data package was complete.

2.0 *CHAIN OF CUSTODY DOCUMENTATION*

The chain of custody documentation was complete.

3.0 *HOLDING TIMES*

The holding times were met for all analyses.

4.0 *INSTRUMENT PERFORMANCE*

All criteria were met. No qualifiers were applied.

5.0 *INITIAL AND CONTINUING CALIBRATIONS*

All criteria were met. No qualifiers were applied.

6.0 *LABORATORY AND FIELD BLANK ANALYSIS RESULTS*

The positive results reported for the following compounds are qualitatively invalid due to the presence of these compounds in associated field blanks. USEPA Region III protocol requires positive results for uncommon contaminants, such as those presented, that are less than five times the level detected in a blank are also invalid. Placing "B" qualifiers next to these quantitative results for these samples has indicated this.

Compound	Samples With Qualified Results
Ethylbenzene	SV-03, SV-07
Isopropyl benzene	SV-01, SV-02, SV-03, SV-04
Methyl ethyl ketone	SV-04
Ethanol	SV-08
Toluene	SV-01, SV-02, SV-07
Xylene (m,p)	SV-01, SV-02, SV-03, SV-04, SV-05
Xylene (total)	SV-01, SV-02, SV-03, SV-04, SV-05

7.0 SURROGATE COMPOUNDS

All criteria were met. No qualifiers were applied.

8.0 MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES AND REPRODUCIBILITY

This parameter is not applicable to the analyses completed.

9.0 FIELD DUPLICATE RESULTS

There were no field duplicate samples submitted with this SDG.

10.0 *LABORATORY CONTROL SAMPLE RESULTS*

All criteria were met. No qualifiers were applied.

11.0 *INTERNAL STANDARD PERFORMANCE*

All criteria were met. No qualifiers were applied.

12.0 *QUALITATIVE IDENTIFICATION*

All criteria were met. No qualifiers were applied.

13.0 *QUANTITATION/REPORTING LIMITS*

The following samples were re-analyzed at dilutions for volatile organic compounds. The samples were re-analyzed because the responses for compounds exceeded the linear range of the GC/ MS instrument. The results for these compounds have been reported from the dilution analyses. All other results are reported from the initial analyses.

Sample	Dilution Factor	Results Exceeding the Linear Range
SV-03	29.6	Acetone, Propylene
SV-04	31.0	Acetone
SV-05	1.3	Acetone, Propylene
SV-06	1.45	Acetone
SV-07	27.6	Acetone

Results for compounds that were qualitatively determined to be present at concentrations above their respective method detection limits, but below their Quantitation Limits (QLs), were not reported by the laboratory. This should be noted when assessing the sample data.

All volatile Tentatively Identified Compounds (TICs) have been reported with "J" qualifiers to indicate that they are quantitative estimates. EDQ has reported only those TIC results that have not been determined to be laboratory or field artifacts, and where possible has grouped TIC of similar classification.

METHODOLOGY REFERENCES

Analysis	Reference
Volatile Organic Compounds	EPA Method TO-15

Table 1 Samples For Data Validation Review
Harley Davidson Soil Vapor Sampling
Accutest Sample Delivery Group J70587

SAMPLE I.D.	LABORATORY I.D	DATE COLLECTED	MATRIX	ANALYSES PERFORMED VOC
FB001	J70587-5	8/30/2007	Field Blank	X
SV-01	J70587-6	8/30/2007	Air/Soil Vapor	X
SV-02	J70587-7	8/30/2007	Air/Soil Vapor	X
SV-03	J70587-8	8/30/2007	Air/Soil Vapor	X
SV-04	J70587-9	8/30/2007	Air/Soil Vapor	X
SV-05	J70587-10	8/31/2007	Air/Soil Vapor	X
SV-06	J70587-11	8/31/2007	Air/Soil Vapor	X
SV-07	J70587-12	8/31/2007	Air/Soil Vapor	X
FB-002	J70587-13	8/31/2007	Field Blank	X
SV-08	J70587-14	8/31/2007	Air/Soil Vapor	X

Raw Data: 2W14230.D

Accutest Laboratories

Report of Analysis

Client Sample ID:	FB001		
Lab Sample ID:	J70587-5	Date Sampled:	08/30/07
Matrix:	AIR - Air Summa ID: A707	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2W14230.D	1.55	09/14/07	YMH	n/a	n/a	V2W627
Run #2							

	Initial Volume
Run #1	620 ml
Run #2	

CAS No.	MW	Compound	Result	RL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	7.4	0.20	ppbv		18	0.48	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.20	ppbv		ND	0.44	ug/m3
71-43-2	78.11	Benzene	0.66	0.20	ppbv		2.1	0.64	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.20	ppbv		ND	1.3	ug/m3
75-25-2	252.8	Bromoform	ND	0.20	ppbv		ND	2.1	ug/m3
74-83-9	94.94	Bromomethane	ND	0.20	ppbv		ND	0.78	ug/m3
593-60-2	106.9	Bromoethene	ND	0.20	ppbv		ND	0.87	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.20	ppbv		ND	1.0	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.20	ppbv		ND	0.62	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.20	ppbv		ND	0.92	ug/m3
75-00-3	64.52	Chloroethane	ND	0.20	ppbv		ND	0.53	ug/m3
67-66-3	119.4	Chloroform	ND	0.20	ppbv		ND	0.98	ug/m3
74-87-3	50.49	Chloromethane	ND	0.20	ppbv		ND	0.41	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.20	ppbv		ND	0.63	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.20	ppbv		ND	1.0	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.20	ppbv		ND	1.3	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.20	ppbv		ND	0.69	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	ppbv		ND	0.81	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.20	ppbv		ND	1.5	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	ppbv		ND	0.81	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.20	ppbv		ND	0.92	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.20	ppbv		ND	0.72	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	0.59	0.20	ppbv		2.9	0.99	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.20	ppbv		ND	1.7	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.20	ppbv		ND	0.91	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.20	ppbv		ND	0.91	ug/m3

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SMH 11/25/2007

Accutest Laboratories

Report of Analysis

Client Sample ID:	FB001		
Lab Sample ID:	J70587-5	Date Sampled:	08/30/07
Matrix:	AIR - Air Summa ID: A707	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

CAS No.	MW	Compound	Result	RL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	7.2	0.50	ppbv		14	0.94	ug/m3
100-41-4	106.2	Ethylbenzene	0.55	0.20	ppbv		2.4	0.87	ug/m3
141-78-6	88	Ethyl Acetate	ND	0.20	ppbv		ND	0.72	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	0.20	ppbv		ND	0.98	ug/m3
76-13-1	187.4	Freon 113	ND	0.20	ppbv		ND	1.5	ug/m3
76-14-2	170.9	Freon 114	ND	0.20	ppbv		ND	1.4	ug/m3
142-82-5	100.2	Heptane	ND	0.20	ppbv		ND	0.82	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.20	ppbv		ND	2.1	ug/m3
110-54-3	86.17	Hexane	ND	0.20	ppbv		ND	0.70	ug/m3
591-78-6	100	2-Hexanone	ND	0.20	ppbv		ND	0.82	ug/m3
67-63-0	60.1	Isopropyl Alcohol	136	0.20	ppbv	E	334	0.49	ug/m3
75-09-2	84.94	Methylene chloride	ND	0.20	ppbv		ND	0.69	ug/m3
78-93-3	72.11	Methyl ethyl ketone	0.60	0.20	ppbv		1.8	0.59	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.20	ppbv		ND	0.82	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	0.56	0.20	ppbv		2.0	0.72	ug/m3
115-07-1	42	Propylene	ND	0.50	ppbv		ND	0.86	ug/m3
100-42-5	104.1	Styrene	ND	0.20	ppbv		ND	0.85	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.20	ppbv		ND	1.1	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.20	ppbv		ND	1.4	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.20	ppbv		ND	1.1	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.20	ppbv		ND	1.5	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	0.17	0.20	ppbv	J	0.84	0.98	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	0.20	ppbv		ND	0.98	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	0.88	0.20	ppbv		4.1	0.93	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	0.20	0.20	ppbv		0.61	0.61	ug/m3
127-18-4	165.8	Tetrachloroethylene	ND	0.20	ppbv		ND	1.4	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.20	ppbv		ND	0.59	ug/m3
108-88-3	92.14	Toluene	1.5	0.20	ppbv		5.7	0.75	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.20	ppbv		ND	1.1	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.31	0.20	ppbv		1.7	1.1	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.20	ppbv		ND	0.51	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.20	ppbv		ND	0.70	ug/m3
	106.2	m,p-Xylene	1.1	0.20	ppbv		4.8	0.87	ug/m3
95-47-6	106.2	o-Xylene	0.50	0.20	ppbv		2.2	0.87	ug/m3
1330-20-7	106.2	Xylenes (total)	1.6	0.20	ppbv		6.9	0.87	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	91%		78-124%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Raw Data: 2W14231.D

Accutest Laboratories

Report of Analysis

p.293

Client Sample ID:	SV-01		
Lab Sample ID:	J70587-6	Date Sampled:	08/30/07
Matrix:	AIR - Air Summa ID: A572	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2W14231.D	1	09/14/07	YMH	n/a	n/a	V2W627
Run #2							

	Initial Volume
Run #1	50.0 ml
Run #2	

CAS No.	MW	Compound	Result	RL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	156	1.6	ppbv		371	3.8	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	1.6	ppbv		ND	3.5	ug/m3
71-43-2	78.11	Benzene	5.4	1.6	ppbv		17	5.1	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	1.6	ppbv		ND	11	ug/m3
75-25-2	252.8	Bromoform	ND	1.6	ppbv		ND	17	ug/m3
74-83-9	94.94	Bromomethane	ND	1.6	ppbv		ND	6.2	ug/m3
593-60-2	106.9	Bromoethene	ND	1.6	ppbv		ND	7.0	ug/m3
100-44-7	126	Benzyl Chloride	ND	1.6	ppbv		ND	8.2	ug/m3
75-15-0	76.14	Carbon disulfide	1.8	1.6	ppbv		5.6	5.0	ug/m3
108-90-7	112.6	Chlorobenzene	ND	1.6	ppbv		ND	7.4	ug/m3
75-00-3	64.52	Chloroethane	ND	1.6	ppbv		ND	4.2	ug/m3
67-66-3	119.4	Chloroform	ND	1.6	ppbv		ND	7.8	ug/m3
74-87-3	50.49	Chloromethane	ND	1.6	ppbv		ND	3.3	ug/m3
107-05-1	76.53	3-Chloropropene	ND	1.6	ppbv		ND	5.0	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	1.6	ppbv		ND	8.3	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	1.6	ppbv		ND	10	ug/m3
110-82-7	84.16	Cyclohexane	ND	1.6	ppbv		ND	5.5	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	1.6	ppbv		ND	6.5	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	1.6	ppbv		ND	12	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	1.6	ppbv		ND	6.5	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	1.6	ppbv		ND	7.4	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	1.6	ppbv		ND	5.8	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	1.6	ppbv		ND	7.9	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	1.6	ppbv		ND	14	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	1.6	ppbv		ND	7.3	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	1.6	ppbv		ND	7.3	ug/m3

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SM 12/12/2007

Accutest Laboratories

Report of Analysis

Client Sample ID:	SV-01		
Lab Sample ID:	J70587-6	Date Sampled:	08/30/07
Matrix:	AIR - Air Summa ID: A572	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

CAS No.	MW	Compound	Result	RL	Units	Q	Result	RL	Units	
64-17-5	46.07	Ethanol	92.5	4.0	ppbv		174	7.5	ug/m3	
100-41-4	106.2	Ethylbenzene	ND	1.6	ppbv		ND	6.9	ug/m3	
141-78-6	88	Ethyl Acetate	ND	1.6	ppbv		ND	5.8	ug/m3	
622-96-8	120.2	4-Ethyltoluene	ND	1.6	ppbv		ND	7.9	ug/m3	
76-13-1	187.4	Freon 113	ND	1.6	ppbv		ND	12	ug/m3	
76-14-2	170.9	Freon 114	ND	1.6	ppbv		ND	11	ug/m3	
142-82-5	100.2	Heptane	ND	1.6	ppbv		ND	6.6	ug/m3	
87-68-3	260.8	Hexachlorobutadiene	ND	1.6	ppbv		ND	17	ug/m3	
110-54-3	86.17	Hexane	ND	1.6	ppbv		ND	5.6	ug/m3	
591-78-6	100	2-Hexanone	ND	1.6	ppbv		ND	6.5	ug/m3	
67-63-0	60.1	Isopropyl Alcohol	37.8 B	1.6	ppbv		92.9	3.9	ug/m3	BL
75-09-2	84.94	Methylene chloride	ND	1.6	ppbv		ND	5.6	ug/m3	
78-93-3	72.11	Methyl ethyl ketone	3.5	1.6	ppbv		10	4.7	ug/m3	
108-10-1	100.2	Methyl Isobutyl Ketone	1.8	1.6	ppbv		7.4	6.6	ug/m3	
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	1.6	ppbv		ND	5.8	ug/m3	
115-07-1	42	Propylene	ND	4.0	ppbv		ND	6.9	ug/m3	
100-42-5	104.1	Styrene	ND	1.6	ppbv		ND	6.8	ug/m3	
71-55-6	133.4	1,1,1-Trichloroethane	ND	1.6	ppbv		ND	8.7	ug/m3	
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	1.6	ppbv		ND	11	ug/m3	
79-00-5	133.4	1,1,2-Trichloroethane	ND	1.6	ppbv		ND	8.7	ug/m3	
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	1.6	ppbv		ND	12	ug/m3	
95-63-6	120.2	1,2,4-Trimethylbenzene	1.1	1.6	ppbv	J	5.4	7.9	ug/m3	
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	1.6	ppbv		ND	7.9	ug/m3	
540-84-1	114.2	2,2,4-Trimethylpentane	6.4	1.6	ppbv		30	7.5	ug/m3	
75-65-0	74.12	Tertiary Butyl Alcohol	3.8	1.6	ppbv		12	4.9	ug/m3	
127-18-4	165.8	Tetrachloroethylene	ND	1.6	ppbv		ND	11	ug/m3	
109-99-9	72.11	Tetrahydrofuran	ND	1.6	ppbv		ND	4.7	ug/m3	
108-88-3	92.14	Toluene	3.8 B	1.6	ppbv		14	6.0	ug/m3	BL
79-01-6	131.4	Trichloroethylene	ND	1.6	ppbv		ND	8.6	ug/m3	
75-69-4	137.4	Trichlorofluoromethane	ND	1.6	ppbv		ND	9.0	ug/m3	
75-01-4	62.5	Vinyl chloride	ND	1.6	ppbv		ND	4.1	ug/m3	
108-05-4	86	Vinyl Acetate	ND	1.6	ppbv		ND	5.6	ug/m3	
	106.2	m,p-Xylene	1.7 B	1.6	ppbv		7.4	6.9	ug/m3	BL
95-47-6	106.2	o-Xylene	ND	1.6	ppbv		ND	6.9	ug/m3	
1330-20-7	106.2	Xylenes (total)	1.7 B	1.6	ppbv		7.4	6.9	ug/m3	BL

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	94%		78-124%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	SV-02		
Lab Sample ID:	J70587-7	Date Sampled:	08/30/07
Matrix:	AIR - Air Summa ID: A619	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3W3302.D	1	09/17/07	YMH	n/a	n/a	V3W146
Run #2							

	Initial Volume
Run #1	50.0 ml
Run #2	

CAS No.	MW	Compound	Result	RL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	285	1.6	ppbv		677	3.8	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	1.6	ppbv		ND	3.5	ug/m3
71-43-2	78.11	Benzene	6.7	1.6	ppbv		21	5.1	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	1.6	ppbv		ND	11	ug/m3
75-25-2	252.8	Bromoform	ND	1.6	ppbv		ND	17	ug/m3
74-83-9	94.94	Bromomethane	ND	1.6	ppbv		ND	6.2	ug/m3
593-60-2	106.9	Bromoethene	ND	1.6	ppbv		ND	7.0	ug/m3
100-44-7	126	Benzyl Chloride	ND	1.6	ppbv		ND	8.2	ug/m3
75-15-0	76.14	Carbon disulfide	ND	1.6	ppbv		ND	5.0	ug/m3
108-90-7	112.6	Chlorobenzene	ND	1.6	ppbv		ND	7.4	ug/m3
75-00-3	64.52	Chloroethane	ND	1.6	ppbv		ND	4.2	ug/m3
67-66-3	119.4	Chloroform	ND	1.6	ppbv		ND	7.8	ug/m3
74-87-3	50.49	Chloromethane	1.9	1.6	ppbv		3.9	3.3	ug/m3
107-05-1	76.53	3-Chloropropene	ND	1.6	ppbv		ND	5.0	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	1.6	ppbv		ND	8.3	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	1.6	ppbv		ND	10	ug/m3
110-82-7	84.16	Cyclohexane	ND	1.6	ppbv		ND	5.5	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	1.6	ppbv		ND	6.5	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	1.6	ppbv		ND	12	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	1.6	ppbv		ND	6.5	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	1.6	ppbv		ND	7.4	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	1.6	ppbv		ND	5.8	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	1.6	ppbv		ND	7.9	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	1.6	ppbv		ND	14	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	1.6	ppbv		ND	7.3	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	1.6	ppbv		ND	7.3	ug/m3

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

3.3

Client Sample ID:	SV-02		
Lab Sample ID:	J70587-7	Date Sampled:	08/30/07
Matrix:	AIR - Air Summa ID: A619	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

CAS No.	MW	Compound	Result		RL	Units	Q	Result	RL	Units	
64-17-5	46.07	Ethanol	121		4.0	ppbv		228	7.5	ug/m3	
100-41-4	106.2	Ethylbenzene	ND		1.6	ppbv		ND	6.9	ug/m3	
141-78-6	88	Ethyl Acetate	ND		1.6	ppbv		ND	5.8	ug/m3	
622-96-8	120.2	4-Ethyltoluene	ND		1.6	ppbv		ND	7.9	ug/m3	
76-13-1	187.4	Freon 113	ND		1.6	ppbv		ND	12	ug/m3	
76-14-2	170.9	Freon 114	ND		1.6	ppbv		ND	11	ug/m3	
142-82-5	100.2	Heptane	1.8		1.6	ppbv		7.4	6.6	ug/m3	
87-68-3	260.8	Hexachlorobutadiene	ND		1.6	ppbv		ND	17	ug/m3	
110-54-3	86.17	Hexane	12.8		1.6	ppbv		45.1	5.6	ug/m3	
591-78-6	100	2-Hexanone	ND		1.6	ppbv		ND	6.5	ug/m3	
67-63-0	60.1	Isopropyl Alcohol	31.7	B	1.6	ppbv		77.9	3.9	ug/m3	BL
75-09-2	84.94	Methylene chloride	ND		1.6	ppbv		ND	5.6	ug/m3	
78-93-3	72.11	Methyl ethyl ketone	4.3		1.6	ppbv		13	4.7	ug/m3	
108-10-1	100.2	Methyl Isobutyl Ketone	1.3		1.6	ppbv	J	5.3	6.6	ug/m3	
1634-04-4	88.15	Methyl Tert Butyl Ether	ND		1.6	ppbv		ND	5.8	ug/m3	
115-07-1	42	Propylene	152		4.0	ppbv		261	6.9	ug/m3	
100-42-5	104.1	Styrene	ND		1.6	ppbv		ND	6.8	ug/m3	
71-55-6	133.4	1,1,1-Trichloroethane	ND		1.6	ppbv		ND	8.7	ug/m3	
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND		1.6	ppbv		ND	11	ug/m3	
79-00-5	133.4	1,1,2-Trichloroethane	ND		1.6	ppbv		ND	8.7	ug/m3	
120-82-1	181.5	1,2,4-Trichlorobenzene	ND		1.6	ppbv		ND	12	ug/m3	
95-63-6	120.2	1,2,4-Trimethylbenzene	ND		1.6	ppbv		ND	7.9	ug/m3	
108-67-8	120.2	1,3,5-Trimethylbenzene	ND		1.6	ppbv		ND	7.9	ug/m3	
540-84-1	114.2	2,2,4-Trimethylpentane	7.1		1.6	ppbv		33	7.5	ug/m3	
75-65-0	74.12	Tertiary Butyl Alcohol	3.7		1.6	ppbv		11	4.9	ug/m3	
127-18-4	165.8	Tetrachloroethylene	ND		1.6	ppbv		ND	11	ug/m3	
109-99-9	72.11	Tetrahydrofuran	ND		1.6	ppbv		ND	4.7	ug/m3	
108-88-3	92.14	Toluene	3.9	B	1.6	ppbv		15	6.0	ug/m3	BL
79-01-6	131.4	Trichloroethylene	ND		1.6	ppbv		ND	8.6	ug/m3	
75-69-4	137.4	Trichlorofluoromethane	ND		1.6	ppbv		ND	9.0	ug/m3	
75-01-4	62.5	Vinyl chloride	ND		1.6	ppbv		ND	4.1	ug/m3	
108-05-4	86	Vinyl Acetate	ND		1.6	ppbv		ND	5.6	ug/m3	
	106.2	m,p-Xylene	1.3	B	1.6	ppbv	J	5.6	6.9	ug/m3	BL
95-47-6	106.2	o-Xylene	ND		1.6	ppbv		ND	6.9	ug/m3	
1330-20-7	106.2	Xylenes (total)	1.3	B	1.6	ppbv	J	5.6	6.9	ug/m3	BL

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	100%		78-124%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	SV-03		
Lab Sample ID:	J70587-8	Date Sampled:	08/30/07
Matrix:	AIR - Air Summa ID: A624,A427	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3W3303.D	1	09/17/07	YMH	n/a	n/a	V3W146
Run #2	2W14262.D	29.6	09/18/07	YMH	n/a	n/a	V2W628

	Initial Volume
Run #1	50.0 ml
Run #2	100 ml

CAS No.	MW	Compound	Result	RL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	602 [a]	24	ppbv		1430 [a]	57	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	1.6	ppbv		ND	3.5	ug/m3
71-43-2	78.11	Benzene	17.0	1.6	ppbv		54.3	5.1	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	1.6	ppbv		ND	11	ug/m3
75-25-2	252.8	Bromoform	ND	1.6	ppbv		ND	17	ug/m3
74-83-9	94.94	Bromomethane	ND	1.6	ppbv		ND	6.2	ug/m3
593-60-2	106.9	Bromoethene	ND	1.6	ppbv		ND	7.0	ug/m3
100-44-7	126	Benzyl Chloride	ND	1.6	ppbv		ND	8.2	ug/m3
75-15-0	76.14	Carbon disulfide	2.3	1.6	ppbv		7.2	5.0	ug/m3
108-90-7	112.6	Chlorobenzene	ND	1.6	ppbv		ND	7.4	ug/m3
75-00-3	64.52	Chloroethane	ND	1.6	ppbv		ND	4.2	ug/m3
67-66-3	119.4	Chloroform	ND	1.6	ppbv		ND	7.8	ug/m3
74-87-3	50.49	Chloromethane	2.7	1.6	ppbv		5.6	3.3	ug/m3
107-05-1	76.53	3-Chloropropene	ND	1.6	ppbv		ND	5.0	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	1.6	ppbv		ND	8.3	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	1.6	ppbv		ND	10	ug/m3
110-82-7	84.16	Cyclohexane	2.0	1.6	ppbv		6.9	5.5	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	1.6	ppbv		ND	6.5	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	1.6	ppbv		ND	12	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	1.6	ppbv		ND	6.5	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	1.6	ppbv		ND	7.4	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	1.6	ppbv		ND	5.8	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	1.6	ppbv		ND	7.9	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	1.6	ppbv		ND	14	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	1.6	ppbv		ND	7.3	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	1.6	ppbv		ND	7.3	ug/m3

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SV-03		
Lab Sample ID:	J70587-8	Date Sampled:	08/30/07
Matrix:	AIR - Air Summa ID: A624,A427	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

CAS No.	MW	Compound	Result		RL	Units	Q	Result	RL	Units	
64-17-5	46.07	Ethanol	167		4.0	ppbv		315	7.5	ug/m3	
100-41-4	106.2	Ethylbenzene	0.96	B	1.6	ppbv	J	4.2	6.9	ug/m3	BL
141-78-6	88	Ethyl Acetate	ND		1.6	ppbv		ND	5.8	ug/m3	
622-96-8	120.2	4-Ethyltoluene	ND		1.6	ppbv		ND	7.9	ug/m3	
76-13-1	187.4	Freon 113	ND		1.6	ppbv		ND	12	ug/m3	
76-14-2	170.9	Freon 114	ND		1.6	ppbv		ND	11	ug/m3	
142-82-5	100.2	Heptane	5.1		1.6	ppbv		21	6.6	ug/m3	
87-68-3	260.8	Hexachlorobutadiene	ND		1.6	ppbv		ND	17	ug/m3	
110-54-3	86.17	Hexane	23.1		1.6	ppbv		81.4	5.6	ug/m3	
591-78-6	100	2-Hexanone	ND		1.6	ppbv		ND	6.5	ug/m3	
67-63-0	60.1	Isopropyl Alcohol	30.8	B	1.6	ppbv		75.7	3.9	ug/m3	BL
75-09-2	84.94	Methylene chloride	ND		1.6	ppbv		ND	5.6	ug/m3	
78-93-3	72.11	Methyl ethyl ketone	9.4		1.6	ppbv		28	4.7	ug/m3	
108-10-1	100.2	Methyl Isobutyl Ketone	2.2		1.6	ppbv		9.0	6.6	ug/m3	
1634-04-4	88.15	Methyl Tert Butyl Ether	ND		1.6	ppbv		ND	5.8	ug/m3	
115-07-1	42	Propylene	255 [a]		59	ppbv		438 [a]	100	ug/m3	
100-42-5	104.1	Styrene	ND		1.6	ppbv		ND	6.8	ug/m3	
71-55-6	133.4	1,1,1-Trichloroethane	ND		1.6	ppbv		ND	8.7	ug/m3	
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND		1.6	ppbv		ND	11	ug/m3	
79-00-5	133.4	1,1,2-Trichloroethane	ND		1.6	ppbv		ND	8.7	ug/m3	
120-82-1	181.5	1,2,4-Trichlorobenzene	ND		1.6	ppbv		ND	12	ug/m3	
95-63-6	120.2	1,2,4-Trimethylbenzene	ND		1.6	ppbv		ND	7.9	ug/m3	
108-67-8	120.2	1,3,5-Trimethylbenzene	ND		1.6	ppbv		ND	7.9	ug/m3	
540-84-1	114.2	2,2,4-Trimethylpentane	14.9		1.6	ppbv		69.6	7.5	ug/m3	
75-65-0	74.12	Tertiary Butyl Alcohol	5.5		1.6	ppbv		17	4.9	ug/m3	
127-18-4	165.8	Tetrachloroethylene	ND		1.6	ppbv		ND	11	ug/m3	
109-99-9	72.11	Tetrahydrofuran	ND		1.6	ppbv		ND	4.7	ug/m3	
108-88-3	92.14	Toluene	12.5		1.6	ppbv		47.1	6.0	ug/m3	
79-01-6	131.4	Trichloroethylene	ND		1.6	ppbv		ND	8.6	ug/m3	
75-69-4	137.4	Trichlorofluoromethane	ND		1.6	ppbv		ND	9.0	ug/m3	
75-01-4	62.5	Vinyl chloride	ND		1.6	ppbv		ND	4.1	ug/m3	
108-05-4	86	Vinyl Acetate	ND		1.6	ppbv		ND	5.6	ug/m3	
	106.2	m,p-Xylene	1.9	B	1.6	ppbv		8.3	6.9	ug/m3	BL
95-47-6	106.2	o-Xylene	ND		1.6	ppbv		ND	6.9	ug/m3	
1330-20-7	106.2	Xylenes (total)	1.9	B	1.6	ppbv		8.3	6.9	ug/m3	BL

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	102%	94%	78-124%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SV-03		
Lab Sample ID:	J70587-8	Date Sampled:	08/30/07
Matrix:	AIR - Air Summa ID: A624,A427	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

CAS No.	MW	Compound	Result	RL	Units	Q	Result	RL	Units

(a) Result is from Run# 2

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Raw Data: 3W3304.D 2W14263.D

Accutest Laboratories

Report of Analysis

Client Sample ID:	SV-04		
Lab Sample ID:	J70587-9	Date Sampled:	08/30/07
Matrix:	AIR - Air Summa ID: A804,A515	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3W3304.D	1	09/18/07	YMH	n/a	n/a	V3W146
Run #2	2W14263.D	31	09/18/07	YMH	n/a	n/a	V2W628

	Initial Volume
Run #1	50.0 ml
Run #2	100 ml

CAS No.	MW	Compound	Result	RL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	1010 [a]	25	ppbv		2400 [a]	59	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	1.6	ppbv		ND	3.5	ug/m3
71-43-2	78.11	Benzene	22.6	1.6	ppbv		72.2	5.1	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	1.6	ppbv		ND	11	ug/m3
75-25-2	252.8	Bromoform	ND	1.6	ppbv		ND	17	ug/m3
74-83-9	94.94	Bromomethane	ND	1.6	ppbv		ND	6.2	ug/m3
593-60-2	106.9	Bromoethene	ND	1.6	ppbv		ND	7.0	ug/m3
100-44-7	126	Benzyl Chloride	ND	1.6	ppbv		ND	8.2	ug/m3
75-15-0	76.14	Carbon disulfide	6.0	1.6	ppbv		19	5.0	ug/m3
108-90-7	112.6	Chlorobenzene	ND	1.6	ppbv		ND	7.4	ug/m3
75-00-3	64.52	Chloroethane	ND	1.6	ppbv		ND	4.2	ug/m3
67-66-3	119.4	Chloroform	ND	1.6	ppbv		ND	7.8	ug/m3
74-87-3	50.49	Chloromethane	ND	1.6	ppbv		ND	3.3	ug/m3
107-05-1	76.53	3-Chloropropene	ND	1.6	ppbv		ND	5.0	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	1.6	ppbv		ND	8.3	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	1.6	ppbv		ND	10	ug/m3
110-82-7	84.16	Cyclohexane	2.7	1.6	ppbv		9.3	5.5	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	1.6	ppbv		ND	6.5	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	1.6	ppbv		ND	12	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	1.6	ppbv		ND	6.5	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	1.6	ppbv		ND	7.4	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	1.6	ppbv		ND	5.8	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	1.6	ppbv		ND	7.9	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	1.6	ppbv		ND	14	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	1.6	ppbv		ND	7.3	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	1.6	ppbv		ND	7.3	ug/m3

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SMY 12/6/2007

Accutest Laboratories

Report of Analysis

Client Sample ID:	SV-04		
Lab Sample ID:	J70587-9	Date Sampled:	08/30/07
Matrix:	AIR - Air Summa ID: A804,A515	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

CAS No.	MW	Compound	Result		RL	Units	Q	Result	RL	Units	
64-17-5	46.07	Ethanol	95.1		4.0	ppbv		179	7.5	ug/m3	
100-41-4	106.2	Ethylbenzene	ND		1.6	ppbv		ND	6.9	ug/m3	
141-78-6	88	Ethyl Acetate	ND		1.6	ppbv		ND	5.8	ug/m3	
622-96-8	120.2	4-Ethyltoluene	ND		1.6	ppbv		ND	7.9	ug/m3	
76-13-1	187.4	Freon 113	ND		1.6	ppbv		ND	12	ug/m3	
76-14-2	170.9	Freon 114	ND		1.6	ppbv		ND	11	ug/m3	
142-82-5	100.2	Heptane	8.1		1.6	ppbv		33	6.6	ug/m3	
87-68-3	260.8	Hexachlorobutadiene	ND		1.6	ppbv		ND	17	ug/m3	
110-54-3	86.17	Hexane	27.9		1.6	ppbv		98.3	5.6	ug/m3	
591-78-6	100	2-Hexanone	ND		1.6	ppbv		ND	6.5	ug/m3	
67-63-0	60.1	Isopropyl Alcohol	14.8	B	1.6	ppbv		36.4	3.9	ug/m3	BL
75-09-2	84.94	Methylene chloride	ND		1.6	ppbv		ND	5.6	ug/m3	
78-93-3	72.11	Methyl ethyl ketone	8.4		1.6	ppbv		25	4.7	ug/m3	
108-10-1	100.2	Methyl Isobutyl Ketone	1.9	B	1.6	ppbv		7.8	6.6	ug/m3	BL
1634-04-4	88.15	Methyl Tert Butyl Ether	ND		1.6	ppbv		ND	5.8	ug/m3	
115-07-1	42	Propylene	312		4.0	ppbv		536	6.9	ug/m3	
100-42-5	104.1	Styrene	ND		1.6	ppbv		ND	6.8	ug/m3	
71-55-6	133.4	1,1,1-Trichloroethane	ND		1.6	ppbv		ND	8.7	ug/m3	
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND		1.6	ppbv		ND	11	ug/m3	
79-00-5	133.4	1,1,2-Trichloroethane	ND		1.6	ppbv		ND	8.7	ug/m3	
120-82-1	181.5	1,2,4-Trichlorobenzene	ND		1.6	ppbv		ND	12	ug/m3	
95-63-6	120.2	1,2,4-Trimethylbenzene	ND		1.6	ppbv		ND	7.9	ug/m3	
108-67-8	120.2	1,3,5-Trimethylbenzene	ND		1.6	ppbv		ND	7.9	ug/m3	
540-84-1	114.2	2,2,4-Trimethylpentane	19.4		1.6	ppbv		90.6	7.5	ug/m3	
75-65-0	74.12	Tertiary Butyl Alcohol	6.4		1.6	ppbv		19	4.9	ug/m3	
127-18-4	165.8	Tetrachloroethylene	ND		1.6	ppbv		ND	11	ug/m3	
109-99-9	72.11	Tetrahydrofuran	ND		1.6	ppbv		ND	4.7	ug/m3	
108-88-3	92.14	Toluene	39.1		1.6	ppbv		147	6.0	ug/m3	
79-01-6	131.4	Trichloroethylene	ND		1.6	ppbv		ND	8.6	ug/m3	
75-69-4	137.4	Trichlorofluoromethane	ND		1.6	ppbv		ND	9.0	ug/m3	
75-01-4	62.5	Vinyl chloride	ND		1.6	ppbv		ND	4.1	ug/m3	
108-05-4	86	Vinyl Acetate	ND		1.6	ppbv		ND	5.6	ug/m3	
	106.2	m,p-Xylene	1.8	B	1.6	ppbv		7.8	6.9	ug/m3	BL
95-47-6	106.2	o-Xylene	ND		1.6	ppbv		ND	6.9	ug/m3	
1330-20-7	106.2	Xylenes (total)	1.8	B	1.6	ppbv		7.8	6.9	ug/m3	BL

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	103%	97%	78-124%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SV-04		
Lab Sample ID:	J70587-9	Date Sampled:	08/30/07
Matrix:	AIR - Air Summa ID: A804,A515	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

CAS No.	MW	Compound	Result	RL	Units	Q	Result	RL	Units

(a) Result is from Run# 2

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Raw Data: 3W3308.D 3W3353.D

Accutest Laboratories

Report of Analysis

Client Sample ID:	SV-05		
Lab Sample ID:	J70587-10	Date Sampled:	08/31/07
Matrix:	AIR - Air Summa ID: A437	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3W3308.D	1	09/18/07	YMH	n/a	n/a	V3W146
Run #2	3W3353.D	1.3	09/19/07	YMH	n/a	n/a	V3W148

	Initial Volume
Run #1	50.0 ml
Run #2	20.0 ml

CAS No.	MW	Compound	Result	RL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	539 [a]	5.2	ppbv		1280 [a]	12	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	1.6	ppbv		ND	3.5	ug/m3
71-43-2	78.11	Benzene	8.9	1.6	ppbv		28	5.1	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	1.6	ppbv		ND	11	ug/m3
75-25-2	252.8	Bromoform	ND	1.6	ppbv		ND	17	ug/m3
74-83-9	94.94	Bromomethane	ND	1.6	ppbv		ND	6.2	ug/m3
593-60-2	106.9	Bromoethene	ND	1.6	ppbv		ND	7.0	ug/m3
100-44-7	126	Benzyl Chloride	ND	1.6	ppbv		ND	8.2	ug/m3
75-15-0	76.14	Carbon disulfide	7.6	1.6	ppbv		24	5.0	ug/m3
108-90-7	112.6	Chlorobenzene	ND	1.6	ppbv		ND	7.4	ug/m3
75-00-3	64.52	Chloroethane	ND	1.6	ppbv		ND	4.2	ug/m3
67-66-3	119.4	Chloroform	ND	1.6	ppbv		ND	7.8	ug/m3
74-87-3	50.49	Chloromethane	ND	1.6	ppbv		ND	3.3	ug/m3
107-05-1	76.53	3-Chloropropene	ND	1.6	ppbv		ND	5.0	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	1.6	ppbv		ND	8.3	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	1.6	ppbv		ND	10	ug/m3
110-82-7	84.16	Cyclohexane	ND	1.6	ppbv		ND	5.5	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	1.6	ppbv		ND	6.5	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	1.6	ppbv		ND	12	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	1.6	ppbv		ND	6.5	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	1.6	ppbv		ND	7.4	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	1.6	ppbv		ND	5.8	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	1.6	ppbv		ND	7.9	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	1.6	ppbv		ND	14	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	1.6	ppbv		ND	7.3	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	1.6	ppbv		ND	7.3	ug/m3

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SV-05		
Lab Sample ID:	J70587-10	Date Sampled:	08/31/07
Matrix:	AIR - Air Summa ID: A437	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

CAS No.	MW	Compound	Result	RL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	139	4.0	ppbv		262	7.5	ug/m3
100-41-4	106.2	Ethylbenzene	ND	1.6	ppbv		ND	6.9	ug/m3
141-78-6	88	Ethyl Acetate	ND	1.6	ppbv		ND	5.8	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	1.6	ppbv		ND	7.9	ug/m3
76-13-1	187.4	Freon 113	ND	1.6	ppbv		ND	12	ug/m3
76-14-2	170.9	Freon 114	ND	1.6	ppbv		ND	11	ug/m3
142-82-5	100.2	Heptane	2.8	1.6	ppbv		11	6.6	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	1.6	ppbv		ND	17	ug/m3
110-54-3	86.17	Hexane	18.9	1.6	ppbv		66.6	5.6	ug/m3
591-78-6	100	2-Hexanone	ND	1.6	ppbv		ND	6.5	ug/m3
67-63-0	60.1	Isopropyl Alcohol	29.9	1.6	ppbv		73.5	3.9	ug/m3
75-09-2	84.94	Methylene chloride	ND	1.6	ppbv		ND	5.6	ug/m3
78-93-3	72.11	Methyl ethyl ketone	7.0	1.6	ppbv		21	4.7	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	1.6	ppbv		ND	6.6	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	1.6	ppbv		ND	5.8	ug/m3
115-07-1	42	Propylene	900 [a]	13	ppbv		1550 [a]	22	ug/m3
100-42-5	104.1	Styrene	ND	1.6	ppbv		ND	6.8	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	1.6	ppbv		ND	8.7	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	1.6	ppbv		ND	11	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	1.6	ppbv		ND	8.7	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	1.6	ppbv		ND	12	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	ND	1.6	ppbv		ND	7.9	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	1.6	ppbv		ND	7.9	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	10.6	1.6	ppbv		49.5	7.5	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	2.4	1.6	ppbv		7.3	4.9	ug/m3
127-18-4	165.8	Tetrachloroethylene	ND	1.6	ppbv		ND	11	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	1.6	ppbv		ND	4.7	ug/m3
108-88-3	92.14	Toluene	7.4	1.6	ppbv		28	6.0	ug/m3
79-01-6	131.4	Trichloroethylene	ND	1.6	ppbv		ND	8.6	ug/m3
75-69-4	137.4	Trichlorofluoromethane	ND	1.6	ppbv		ND	9.0	ug/m3
75-01-4	62.5	Vinyl chloride	ND	1.6	ppbv		ND	4.1	ug/m3
108-05-4	86	Vinyl Acetate	ND	1.6	ppbv		ND	5.6	ug/m3
	106.2	m,p-Xylene	1.6 B	1.6	ppbv		6.9	6.9	ug/m3
95-47-6	106.2	o-Xylene	ND	1.6	ppbv		ND	6.9	ug/m3
1330-20-7	106.2	Xylenes (total)	1.6	1.6	ppbv		6.9	6.9	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	104%	99%	78-124%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SV-05		
Lab Sample ID:	J70587-10	Date Sampled:	08/31/07
Matrix:	AIR - Air Summa ID: A437	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

CAS No.	MW	Compound	Result	RL	Units	Q	Result	RL	Units

(a) Result is from Run# 2

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Raw Data: 3W3309.D 3W3354.D

Accutest Laboratories

Report of Analysis

Client Sample ID:	SV-06		
Lab Sample ID:	J70587-11	Date Sampled:	08/31/07
Matrix:	AIR - Air Summa ID: A555	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3W3309.D	1	09/18/07	YMH	n/a	n/a	V3W146
Run #2	3W3354.D	1.45	09/20/07	YMH	n/a	n/a	V3W148

	Initial Volume
Run #1	50.0 ml
Run #2	20.0 ml

CAS No.	MW	Compound	Result	RL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	625 [a]	5.8	ppbv		1480 [a]	14	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	1.6	ppbv		ND	3.5	ug/m3
71-43-2	78.11	Benzene	12.4	1.6	ppbv		39.6	5.1	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	1.6	ppbv		ND	11	ug/m3
75-25-2	252.8	Bromoform	ND	1.6	ppbv		ND	17	ug/m3
74-83-9	94.94	Bromomethane	ND	1.6	ppbv		ND	6.2	ug/m3
593-60-2	106.9	Bromoethene	ND	1.6	ppbv		ND	7.0	ug/m3
100-44-7	126	Benzyl Chloride	ND	1.6	ppbv		ND	8.2	ug/m3
75-15-0	76.14	Carbon disulfide	7.8	1.6	ppbv		24	5.0	ug/m3
108-90-7	112.6	Chlorobenzene	ND	1.6	ppbv		ND	7.4	ug/m3
75-00-3	64.52	Chloroethane	ND	1.6	ppbv		ND	4.2	ug/m3
67-66-3	119.4	Chloroform	ND	1.6	ppbv		ND	7.8	ug/m3
74-87-3	50.49	Chloromethane	ND	1.6	ppbv		ND	3.3	ug/m3
107-05-1	76.53	3-Chloropropene	ND	1.6	ppbv		ND	5.0	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	1.6	ppbv		ND	8.3	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	1.6	ppbv		ND	10	ug/m3
110-82-7	84.16	Cyclohexane	1.6	1.6	ppbv		5.5	5.5	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	1.6	ppbv		ND	6.5	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	1.6	ppbv		ND	12	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	1.6	ppbv		ND	6.5	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	1.6	ppbv		ND	7.4	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	1.6	ppbv		ND	5.8	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	1.6	ppbv		ND	7.9	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	1.6	ppbv		ND	14	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	1.6	ppbv		ND	7.3	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	1.6	ppbv		ND	7.3	ug/m3

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SV-06		
Lab Sample ID:	J70587-11	Date Sampled:	08/31/07
Matrix:	AIR - Air Summa ID: A555	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

CAS No.	MW	Compound	Result	RL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	153	4.0	ppbv		288	7.5	ug/m3
100-41-4	106.2	Ethylbenzene	1.1	1.6	ppbv	J	4.8	6.9	ug/m3
141-78-6	88	Ethyl Acetate	ND	1.6	ppbv		ND	5.8	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	1.6	ppbv		ND	7.9	ug/m3
76-13-1	187.4	Freon 113	ND	1.6	ppbv		ND	12	ug/m3
76-14-2	170.9	Freon 114	ND	1.6	ppbv		ND	11	ug/m3
142-82-5	100.2	Heptane	4.2	1.6	ppbv		17	6.6	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	1.6	ppbv		ND	17	ug/m3
110-54-3	86.17	Hexane	16.2	1.6	ppbv		57.1	5.6	ug/m3
591-78-6	100	2-Hexanone	ND	1.6	ppbv		ND	6.5	ug/m3
67-63-0	60.1	Isopropyl Alcohol	43.2	1.6	ppbv		106	3.9	ug/m3
75-09-2	84.94	Methylene chloride	ND	1.6	ppbv		ND	5.6	ug/m3
78-93-3	72.11	Methyl ethyl ketone	5.5	1.6	ppbv		16	4.7	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	1.6	ppbv		ND	6.6	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	1.6	ppbv		ND	5.8	ug/m3
115-07-1	42	Propylene	33.0	4.0	ppbv		56.7	6.9	ug/m3
100-42-5	104.1	Styrene	ND	1.6	ppbv		ND	6.8	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	1.6	ppbv		ND	8.7	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	1.6	ppbv		ND	11	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	1.6	ppbv		ND	8.7	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	1.6	ppbv		ND	12	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	ND	1.6	ppbv		ND	7.9	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	1.6	ppbv		ND	7.9	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	11.0	1.6	ppbv		51.4	7.5	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	2.7	1.6	ppbv		8.2	4.9	ug/m3
127-18-4	165.8	Tetrachloroethylene	ND	1.6	ppbv		ND	11	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	1.6	ppbv		ND	4.7	ug/m3
108-88-3	92.14	Toluene	14.7	1.6	ppbv		55.4	6.0	ug/m3
79-01-6	131.4	Trichloroethylene	ND	1.6	ppbv		ND	8.6	ug/m3
75-69-4	137.4	Trichlorofluoromethane	ND	1.6	ppbv		ND	9.0	ug/m3
75-01-4	62.5	Vinyl chloride	ND	1.6	ppbv		ND	4.1	ug/m3
108-05-4	86	Vinyl Acetate	ND	1.6	ppbv		ND	5.6	ug/m3
	106.2	m,p-Xylene	2.2	1.6	ppbv		9.6	6.9	ug/m3
95-47-6	106.2	o-Xylene	0.61	1.6	ppbv	J	2.6	6.9	ug/m3
1330-20-7	106.2	Xylenes (total)	2.8	1.6	ppbv		12	6.9	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	103%	104%	78-124%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	SV-06		
Lab Sample ID:	J70587-11	Date Sampled:	08/31/07
Matrix:	AIR - Air Summa ID: A555	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

CAS No.	MW	Compound	Result	RL	Units	Q	Result	RL	Units

(a) Result is from Run# 2

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Raw Data: 2W14241.D 3W3355.D

Accutest Laboratories

Report of Analysis

3.8

Client Sample ID:	SV-07		
Lab Sample ID:	J70587-12	Date Sampled:	08/31/07
Matrix:	AIR - Air Summa ID: A583,A693	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2W14241.D	1	09/17/07	YMH	n/a	n/a	V2W628
Run #2	3W3355.D	27.6	09/20/07	YMH	n/a	n/a	V3W148

	Initial Volume
Run #1	50.0 ml
Run #2	100 ml

CAS No.	MW	Compound	Result	RL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	585 [a]	22	ppbv		1390 [a]	52	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	1.6	ppbv		ND	3.5	ug/m3
71-43-2	78.11	Benzene	6.5	1.6	ppbv		21	5.1	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	1.6	ppbv		ND	11	ug/m3
75-25-2	252.8	Bromoform	ND	1.6	ppbv		ND	17	ug/m3
74-83-9	94.94	Bromomethane	ND	1.6	ppbv		ND	6.2	ug/m3
593-60-2	106.9	Bromoethene	ND	1.6	ppbv		ND	7.0	ug/m3
100-44-7	126	Benzyl Chloride	ND	1.6	ppbv		ND	8.2	ug/m3
75-15-0	76.14	Carbon disulfide	2.6	1.6	ppbv		8.1	5.0	ug/m3
108-90-7	112.6	Chlorobenzene	ND	1.6	ppbv		ND	7.4	ug/m3
75-00-3	64.52	Chloroethane	ND	1.6	ppbv		ND	4.2	ug/m3
67-66-3	119.4	Chloroform	ND	1.6	ppbv		ND	7.8	ug/m3
74-87-3	50.49	Chloromethane	ND	1.6	ppbv		ND	3.3	ug/m3
107-05-1	76.53	3-Chloropropene	ND	1.6	ppbv		ND	5.0	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	1.6	ppbv		ND	8.3	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	1.6	ppbv		ND	10	ug/m3
110-82-7	84.16	Cyclohexane	ND	1.6	ppbv		ND	5.5	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	1.6	ppbv		ND	6.5	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	1.6	ppbv		ND	12	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	1.6	ppbv		ND	6.5	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	1.6	ppbv		ND	7.4	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	1.6	ppbv		ND	5.8	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	1.6	ppbv		ND	7.9	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	1.6	ppbv		ND	14	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	1.6	ppbv		ND	7.3	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	1.6	ppbv		ND	7.3	ug/m3

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SMM 12/15/2007

Report of Analysis

3.8

Client Sample ID:	SV-07		
Lab Sample ID:	J70587-12	Date Sampled:	08/31/07
Matrix:	AIR - Air Summa ID: A583,A693	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

CAS No.	MW	Compound	Result		RL	Units	Q	Result	RL	Units	
64-17-5	46.07	Ethanol	153		4.0	ppbv		288	7.5	ug/m3	
100-41-4	106.2	Ethylbenzene	1.3	B	1.6	ppbv	J	5.6	6.9	ug/m3	BL
141-78-6	88	Ethyl Acetate	ND		1.6	ppbv		ND	5.8	ug/m3	
622-96-8	120.2	4-Ethyltoluene	ND		1.6	ppbv		ND	7.9	ug/m3	
76-13-1	187.4	Freon 113	ND		1.6	ppbv		ND	12	ug/m3	
76-14-2	170.9	Freon 114	ND		1.6	ppbv		ND	11	ug/m3	
142-82-5	100.2	Heptane	ND		1.6	ppbv		ND	6.6	ug/m3	
87-68-3	260.8	Hexachlorobutadiene	ND		1.6	ppbv		ND	17	ug/m3	
110-54-3	86.17	Hexane	12.8		1.6	ppbv		45.1	5.6	ug/m3	
591-78-6	100	2-Hexanone	ND		1.6	ppbv		ND	6.5	ug/m3	
67-63-0	60.1	Isopropyl Alcohol	52.4		1.6	ppbv		129	3.9	ug/m3	
75-09-2	84.94	Methylene chloride	ND		1.6	ppbv		ND	5.6	ug/m3	
78-93-3	72.11	Methyl ethyl ketone	3.2		1.6	ppbv		9.4	4.7	ug/m3	
108-10-1	100.2	Methyl Isobutyl Ketone	ND		1.6	ppbv		ND	6.6	ug/m3	
1634-04-4	88.15	Methyl Tert Butyl Ether	ND		1.6	ppbv		ND	5.8	ug/m3	
115-07-1	42	Propylene	195		4.0	ppbv		335	6.9	ug/m3	
100-42-5	104.1	Styrene	ND		1.6	ppbv		ND	6.8	ug/m3	
71-55-6	133.4	1,1,1-Trichloroethane	ND		1.6	ppbv		ND	8.7	ug/m3	
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND		1.6	ppbv		ND	11	ug/m3	
79-00-5	133.4	1,1,2-Trichloroethane	ND		1.6	ppbv		ND	8.7	ug/m3	
120-82-1	181.5	1,2,4-Trichlorobenzene	ND		1.6	ppbv		ND	12	ug/m3	
95-63-6	120.2	1,2,4-Trimethylbenzene	1.5		1.6	ppbv	J	7.4	7.9	ug/m3	
108-67-8	120.2	1,3,5-Trimethylbenzene	ND		1.6	ppbv		ND	7.9	ug/m3	
540-84-1	114.2	2,2,4-Trimethylpentane	7.6		1.6	ppbv		35	7.5	ug/m3	
75-65-0	74.12	Tertiary Butyl Alcohol	4.8		1.6	ppbv		15	4.9	ug/m3	
127-18-4	165.8	Tetrachloroethylene	ND		1.6	ppbv		ND	11	ug/m3	
109-99-9	72.11	Tetrahydrofuran	ND		1.6	ppbv		ND	4.7	ug/m3	
108-88-3	92.14	Toluene	4.4	B	1.6	ppbv		17	6.0	ug/m3	BL
79-01-6	131.4	Trichloroethylene	ND		1.6	ppbv		ND	8.6	ug/m3	
75-69-4	137.4	Trichlorofluoromethane	ND		1.6	ppbv		ND	9.0	ug/m3	
75-01-4	62.5	Vinyl chloride	ND		1.6	ppbv		ND	4.1	ug/m3	
108-05-4	86	Vinyl Acetate	ND		1.6	ppbv		ND	5.6	ug/m3	
	106.2	m,p-Xylene	3.3		1.6	ppbv		14	6.9	ug/m3	
95-47-6	106.2	o-Xylene	1.3		1.6	ppbv	J	5.6	6.9	ug/m3	
1330-20-7	106.2	Xylenes (total)	4.6		1.6	ppbv		20	6.9	ug/m3	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	94%	102%	78-124%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	SV-07		
Lab Sample ID:	J70587-12	Date Sampled:	08/31/07
Matrix:	AIR - Air Summa ID: A583,A693	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

CAS No.	MW	Compound	Result	RL	Units	Q	Result	RL	Units

(a) Result is from Run# 2

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	SV-08		
Lab Sample ID:	J70587-14	Date Sampled:	08/31/07
Matrix:	AIR - Air Summa ID: A625	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2W14243.D	1	09/17/07	YMH	n/a	n/a	V2W628
Run #2							

	Initial Volume
Run #1	50.0 ml
Run #2	

CAS No.	MW	Compound	Result	RL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	238	1.6	ppbv		565	3.8	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	1.6	ppbv		ND	3.5	ug/m3
71-43-2	78.11	Benzene	3.2	1.6	ppbv		10	5.1	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	1.6	ppbv		ND	11	ug/m3
75-25-2	252.8	Bromoform	ND	1.6	ppbv		ND	17	ug/m3
74-83-9	94.94	Bromomethane	ND	1.6	ppbv		ND	6.2	ug/m3
593-60-2	106.9	Bromoethene	ND	1.6	ppbv		ND	7.0	ug/m3
100-44-7	126	Benzyl Chloride	ND	1.6	ppbv		ND	8.2	ug/m3
75-15-0	76.14	Carbon disulfide	ND	1.6	ppbv		ND	5.0	ug/m3
108-90-7	112.6	Chlorobenzene	ND	1.6	ppbv		ND	7.4	ug/m3
75-00-3	64.52	Chloroethane	ND	1.6	ppbv		ND	4.2	ug/m3
67-66-3	119.4	Chloroform	ND	1.6	ppbv		ND	7.8	ug/m3
74-87-3	50.49	Chloromethane	ND	1.6	ppbv		ND	3.3	ug/m3
107-05-1	76.53	3-Chloropropene	ND	1.6	ppbv		ND	5.0	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	1.6	ppbv		ND	8.3	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	1.6	ppbv		ND	10	ug/m3
110-82-7	84.16	Cyclohexane	ND	1.6	ppbv		ND	5.5	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	1.6	ppbv		ND	6.5	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	1.6	ppbv		ND	12	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	1.6	ppbv		ND	6.5	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	1.6	ppbv		ND	7.4	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	1.6	ppbv		ND	5.8	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	1.6	ppbv		ND	7.9	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	1.6	ppbv		ND	14	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	1.6	ppbv		ND	6.3	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	1.6	ppbv		ND	7.3	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	1.6	ppbv		ND	9.6	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	1.6	ppbv		ND	7.3	ug/m3

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

3.10 3

Client Sample ID:	SV-08		
Lab Sample ID:	J70587-14	Date Sampled:	08/31/07
Matrix:	AIR - Air Summa ID: A625	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

CAS No.	MW	Compound	Result		RL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	40.5	B	4.0	ppbv		76.3	7.5	ug/m3
100-41-4	106.2	Ethylbenzene	ND		1.6	ppbv		ND	6.9	ug/m3
141-78-6	88	Ethyl Acetate	ND		1.6	ppbv		ND	5.8	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND		1.6	ppbv		ND	7.9	ug/m3
76-13-1	187.4	Freon 113	ND		1.6	ppbv		ND	12	ug/m3
76-14-2	170.9	Freon 114	ND		1.6	ppbv		ND	11	ug/m3
142-82-5	100.2	Heptane	ND		1.6	ppbv		ND	6.6	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND		1.6	ppbv		ND	17	ug/m3
110-54-3	86.17	Hexane	ND		1.6	ppbv		ND	5.6	ug/m3
591-78-6	100	2-Hexanone	ND		1.6	ppbv		ND	6.5	ug/m3
67-63-0	60.1	Isopropyl Alcohol	16.8		1.6	ppbv		41.3	3.9	ug/m3
75-09-2	84.94	Methylene chloride	4.4		1.6	ppbv		15	5.6	ug/m3
78-93-3	72.11	Methyl ethyl ketone	ND		1.6	ppbv		ND	4.7	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND		1.6	ppbv		ND	6.6	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND		1.6	ppbv		ND	5.8	ug/m3
115-07-1	42	Propylene	138		4.0	ppbv		237	6.9	ug/m3
100-42-5	104.1	Styrene	ND		1.6	ppbv		ND	6.8	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND		1.6	ppbv		ND	8.7	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND		1.6	ppbv		ND	11	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND		1.6	ppbv		ND	8.7	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND		1.6	ppbv		ND	12	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	ND		1.6	ppbv		ND	7.9	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND		1.6	ppbv		ND	7.9	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	4.2		1.6	ppbv		20	7.5	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND		1.6	ppbv		ND	4.9	ug/m3
127-18-4	165.8	Tetrachloroethylene	ND		1.6	ppbv		ND	11	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND		1.6	ppbv		ND	4.7	ug/m3
108-88-3	92.14	Toluene	1.5		1.6	ppbv	J	5.7	6.0	ug/m3
79-01-6	131.4	Trichloroethylene	ND		1.6	ppbv		ND	8.6	ug/m3
75-69-4	137.4	Trichlorofluoromethane	ND		1.6	ppbv		ND	9.0	ug/m3
75-01-4	62.5	Vinyl chloride	ND		1.6	ppbv		ND	4.1	ug/m3
108-05-4	86	Vinyl Acetate	ND		1.6	ppbv		ND	5.6	ug/m3
	106.2	m,p-Xylene	ND		1.6	ppbv		ND	6.9	ug/m3
95-47-6	106.2	o-Xylene	ND		1.6	ppbv		ND	6.9	ug/m3
1330-20-7	106.2	Xylenes (total)	ND		1.6	ppbv		ND	6.9	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	94%		78-124%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Raw Data: 2W14242.D

Accutest Laboratories

Report of Analysis

Client Sample ID:	FB002		
Lab Sample ID:	J70587-13	Date Sampled:	08/31/07
Matrix:	AIR - Air Summa ID: A365	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2W14242.D	1.53	09/17/07	YMH	n/a	n/a	V2W628
Run #2							

	Initial Volume
Run #1	612 ml
Run #2	

CAS No.	MW	Compound	Result	RL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	7.9	0.20	ppbv		19	0.48	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.20	ppbv		ND	0.44	ug/m3
71-43-2	78.11	Benzene	0.32	0.20	ppbv		1.0	0.64	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.20	ppbv		ND	1.3	ug/m3
75-25-2	252.8	Bromoform	ND	0.20	ppbv		ND	2.1	ug/m3
74-83-9	94.94	Bromomethane	ND	0.20	ppbv		ND	0.78	ug/m3
593-60-2	106.9	Bromoethene	ND	0.20	ppbv		ND	0.87	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.20	ppbv		ND	1.0	ug/m3
75-15-0	76.14	Carbon disulfide	0.42	0.20	ppbv		1.3	0.62	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.20	ppbv		ND	0.92	ug/m3
75-00-3	64.52	Chloroethane	ND	0.20	ppbv		ND	0.53	ug/m3
67-66-3	119.4	Chloroform	ND	0.20	ppbv		ND	0.98	ug/m3
74-87-3	50.49	Chloromethane	0.45	0.20	ppbv		0.93	0.41	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.20	ppbv		ND	0.63	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.20	ppbv		ND	1.0	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.20	ppbv		ND	1.3	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.20	ppbv		ND	0.69	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	ppbv		ND	0.81	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.20	ppbv		ND	1.5	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	ppbv		ND	0.81	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.20	ppbv		ND	0.92	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.20	ppbv		ND	0.72	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	0.64	0.20	ppbv		3.2	0.99	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.20	ppbv		ND	1.7	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.20	ppbv		ND	0.91	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.20	ppbv		ND	0.91	ug/m3

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FB002		
Lab Sample ID:	J70587-13	Date Sampled:	08/31/07
Matrix:	AIR - Air Summa ID: A365	Date Received:	09/05/07
Method:	TO-15	Percent Solids:	n/a
Project:	Harley Davidson, Eden Road, York, PA		

CAS No.	MW	Compound	Result	RL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	12.7	0.50	ppbv		23.9	0.94	ug/m3
100-41-4	106.2	Ethylbenzene	0.29	0.20	ppbv		1.3	0.87	ug/m3
141-78-6	88	Ethyl Acetate	ND	0.20	ppbv		ND	0.72	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	0.20	ppbv		ND	0.98	ug/m3
76-13-1	187.4	Freon 113	ND	0.20	ppbv		ND	1.5	ug/m3
76-14-2	170.9	Freon 114	ND	0.20	ppbv		ND	1.4	ug/m3
142-82-5	100.2	Heptane	ND	0.20	ppbv		ND	0.82	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.20	ppbv		ND	2.1	ug/m3
110-54-3	86.17	Hexane	ND	0.20	ppbv		ND	0.70	ug/m3
591-78-6	100	2-Hexanone	ND	0.20	ppbv		ND	0.82	ug/m3
67-63-0	60.1	Isopropyl Alcohol	1.9	0.20	ppbv		4.7	0.49	ug/m3
75-09-2	84.94	Methylene chloride	ND	0.20	ppbv		ND	0.69	ug/m3
78-93-3	72.11	Methyl ethyl ketone	0.38	0.20	ppbv		1.1	0.59	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.20	ppbv		ND	0.82	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	0.20	ppbv		ND	0.72	ug/m3
115-07-1	42	Propylene	ND	0.50	ppbv		ND	0.86	ug/m3
100-42-5	104.1	Styrene	ND	0.20	ppbv		ND	0.85	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.20	ppbv		ND	1.1	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.20	ppbv		ND	1.4	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.20	ppbv		ND	1.1	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.20	ppbv		ND	1.5	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	0.14	0.20	ppbv	J	0.69	0.98	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	0.20	ppbv		ND	0.98	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	ND	0.20	ppbv		ND	0.93	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.20	ppbv		ND	0.61	ug/m3
127-18-4	165.8	Tetrachloroethylene	ND	0.20	ppbv		ND	1.4	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.20	ppbv		ND	0.59	ug/m3
108-88-3	92.14	Toluene	1.0	0.20	ppbv		3.8	0.75	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.20	ppbv		ND	1.1	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.33	0.20	ppbv		1.9	1.1	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.20	ppbv		ND	0.51	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.20	ppbv		ND	0.70	ug/m3
	106.2	m,p-Xylene	0.33	0.20	ppbv		1.4	0.87	ug/m3
95-47-6	106.2	o-Xylene	0.23	0.20	ppbv		1.0	0.87	ug/m3
1330-20-7	106.2	Xylenes (total)	0.55	0.20	ppbv		2.4	0.87	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	94%		78-124%

ND = Not detected
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E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Data Validation Qualifier Code Glossary

B - The compound/analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

J - The positive result reported for this analyte is a quantitative estimate.

U - This compound/analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

UJ - This compound/analyte was not detected in the sample. The quantitation/detection should be considered estimated and may be inaccurate or imprecise.

R The result for this compound/analyte is unusable. The analyte may or may not be present.

K - The positive result reported for this analyte is a biased high quantitative estimate. The actual result may be lower than reported.

L - The positive result for this analyte is a biased low quantitative estimate. The actual result may be higher than reported.

UL - This compound/analyte was not detected in the sample. The actual quantitation/detection may be higher than reported.

X - This analyte coelutes with another target compound on the two chromatographic columns used for analysis.

Other Codes:

ND - There were no positive results for this analytical fraction.

NA - This parameter is not applicable to this sample.

NR - This analysis parameter was not required for this sample.